An Authoritative Reference Book For All Competitive Examinations

A HAND BOOK OF GENERAL KNOWLEDGE

(For National Defence Academy, Indian Navy,
Air Force, Indian Military College, I. I. T.,
Subordinate Services, Clerical Grade,
Railway Apprentices and Allied
Examinations)

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1968

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APRIL 1968 SUPPLEMENT

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Published By
Rajendra Malhotra
For Patanjali Publications
M-3/6 Boring Road, Patna-13

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Price : Rupees Four and Fifty Paise only.

Printed at :
Bihar Rajya Shikshak
Sahyog Sangh, Ltd.'Press
Exhibition Road, Patna-1

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BIHAR PUBLIC SERVICE COMMISSION

GENERAL KNOWLEDGE

Sixteenth Combined Competitive Examination, 1966

1. Explain in brief any six of the following :—

   (a) Hybrid seeds. (b) World Food Programme. (c) National Development Council. (d) P. L. 480. (e) Asian Development Bank. (f) Unit Trust. (g) ECAFE. (h) European Economic Community. (i) Public Sector. (j) Agricultural Refinance Corporation.

2. Write short notes on any six of the following :—

   (a) Quasars. (b) Heavy water. (c) Algae. (d) Genes. (e) Cybernetics. (f) Telstar. (g) Naphtha. (h) Laser. (i) Pressurized cabin. (j) Seismograph.

3. Answer any six of the following :—

   (a) What is the highest award for valour that a member of the Indian armed forces can win ? Name those who won it during the Indo Pak hostilities of 1965.

   (b) In the context of military operations what is meant by logistics ? Who has more advantageous logistics—India or China ?

   (c) Name the heads of the Indian armed forces—Army, Navy and Air Force—along with their designations.

   (d) What is the Arjuna Award ? Name any one recipient of the Arjuna Award in 1966.

   (e) Who was the leader of the team which succeeded first in climbing Mount Everest ? Give the name and location of the institution at which training is imparted in mountain-climbing in India.

   (f) Give the names of (i) 1966 Wimbledon Singles Champion (Men), (ii) captain of the winning team at the final of World Soccer Tournament, (iii) the swimmer who crossed the Palk Strait, (iv) the place where the Commonwealth Games were held in 1966 and (v) world heavy-weight boxing champion.

(g) Name the sports with which the following names are associated :—
Mohan Bagan, Pataudi, Dinesh Khanna, Merdeka and Vizzy

(h) What is common between the N.C.C. and the Territorial Army ? What is a Sainik School ?

(i) In what year and country were the modern Olympic Games revived ? What do the rings in the Olympic Crest symbolize ?

4. Imagine you are on a visit to a Western country and are asked the following questions about India. What will be your answers to any three of the following ? Your answers should be brief and to the point :—

(a) India receives so much aid from Western countries—both for food and defence. Why should, therefore, India persist in remaining non-aligned ?

(b) What are the grounds (political and legal) on which India has ruled out a plebiscite for Kashmir ?

(c) Why doesn't India recognize Israel and Taiwan ?

(d) How do you expect to build up a unified nation in face of such sharp linguistic rivalries ?

5. Write short notes on any six of the following :—

(a) Mandan Mishra. (b) The difference between a Tirthankar and a Bodhisattva. (c) Chhat festival in Bihar. (d) Khudabaksh Library. (e) Chhau dance. (f) Silappadhikaram. (g) Nandalal Bose. (h) The Todas. (i) Mahapurush Shankardeva. (j) Barabar Caves.

6. Answer any five of the following :—

(a) What are the principal ways in which Parliament in India exercises control over expenditure by Government ?

(b) What is the difference between Viet Nam and Viet Cong ?

(c) An Indian in F.A.O. and another in U.N. are holding very high positions. ∴ Who are they, and what are their designations ?

(d) What are the election symbols of the Congress, Jan Sangh, Swatantra and Communist parties ?

(e) Where is the World Court situated ? Who is the Pakistani member of it ?

(f) Name the First Secretary of the Communist Party of the U.S.S.R. and the Prime Minister of the U.S.S.R.

(g) Name the Governor, the Chief Minister and the capital of Nagaland.

7. Write briefly on any three of the following :—

(a) What are your suggestions for bringing about a better understanding of Southern culture by North Indians ?

(b) What are mass media of communications ? In what ways do they benifit society ?

(c] In several parts of Bihar expansion of industries is destroying folk culture. Should an attempt be made to preserve folk forms of entertainment and art ? Can this be done consistently with the needs of industries ?

(d) With the disappearance of Princes and the landed aristocracy, patronage of music and the fine arts has passed on to the State. What are the advantages and disadvantages of the State's patronage of the arts ? Can you suggest any other source of patronage ?

(e) Jawaharlal Nehru once said that in India we live simultaneously in more than one century. Elucidate this remark.

8. What do you know of any six of the following :—

(a) Ananda Coomaraswamy. (b) Kashi Prasad Jayaswal. (c) Homi Bhabha. (d) Vasudeva Sharan Agrawal. (e) Tyagaraja. (f) Rahul Sanskritayan. (g) Dr. Zhivago. (h) Ramchatur Malik. (i) R.K. Narayan. (j) Ustad Alauddin Khan.

ANSWERS

Ans. 1(a) **Hybrid Seeds :** Plants produced from two different species.

(*b*) **World Food Programme :** It is carried out under the auspices of F.A.O. (Food and Agriculture Organization). **Its** airms are :—

(i) to help nations in raising their living standards.

(ii) to improve the conditions of people in rural areas (iii) to improve the quality of food and (iv) to suggest measures for more efficient agriculture, forestry and fisheries (v) to help the people of the world in their continued fight against hunger and starvation.

(c) **National Development Council :** It is constituted to review the working of the National Plans from time to time and to consider important questions of social and economic policy affecting national development.

Its aim is also to recommend measures for the achievement of aims and targets set out in the National Plans. It also suggests measures to improve the efficiency of the administrative services.

(d) **P. L. 480 :** (Public Law enacted by the 83rd Congress) passed in 1954.

Its main provisions are :

(i) Money from the sale of American agricultural commodities is used for grants and loans.

(ii) Emergency donations of agricultural surplus are made in case of famine.

(iii) Food donations are made to voluntary organizations assisting the needy.

During the Third Plan period India got about 16 million tons of Wheat and one millon tons of rice.

(e) **Asian Development Bank :** It has been established with the assistance of U.S.A. and Japan for the economic development of Asia with the total capital of 1000 million dollars.

(f) **Unit Trust :** It is an institution to promote the sale of Units to the public by the Unit Trust of India. Inaugurated in 1964, it is an institution to pool the savings of the community for investment in company shares and other securities.

The aims and objectives of the institution are to achieve a socialist society, under which people will own the means of production and distribution of the product will be equitable.'

(g) **ECAFE :** This is an abbreviated form for Economic Commission for Asia and the Far East established by the Economic and Social Council of U.N.O.

The aims and objectives of this body are to promote higher standard of living, full employment and to create conditions favourable for economic and social progress.

(h) **European Economic Community :**

Members *:* Belgium, France, West Germany, Italy, Luxamburg and Netherland. Established, June 1, 1957.

Aims : (i) to establish a common market, (ii) to devise common policies for agriculture, (iii) to set up institution for common economic development and (iv) to reduce tariffs among member countries, complete abolition of tariffs to be achieved between 12 to 15 years.

(i) **Public Sector** *:* A term which is generally applied to State enterprises or undertakings *i.e.*, those concerns or undertakings which are nationalised and run by the State.

(j) **Agricultural Refinance Corporation** *:* Inaugurated in 1963, the main function of this body is to augument resources for giving agricultural credit. A scheme has been initiated to intensify rice production in 40 selected districts on 'package' basis, cotton, oil seeds and other important commercial crops have also been placed under this programme.

2. Ans. (a) Quasars *:* A name given to quasi-steller objects or quasi.stars which are observed with the help of optical or radio telescopes near the farthest limit of the universe. These objects are very luminous and emit very powerful radio-waves.

(b) **Heavy Water** *:* A chemical compound prepared by the combination of Oxygen with an isotope of Hydrogen whose atomic weight is 2. It is used as a moderator in atomic energy plant.

(c) **Algae** *:* The name of a large group of organized plants, not differentiated into root, stem or leaf, but possessing chlorophyle, including the sea weeds and similar weeds found in stagnant or slow-flowing fresh water.

(d) **Genes** : The ultimate biological units of heredity; the part of or place (locus) on the chromosome that determines physical inheritance and constitution.

(e) **Cybernetics** : Name given to the study of 'communication and control mechanism' in machines and living creatures.

(f) **Telstar** : It is an instrument invented by U.S.A. to transmit wireless or television broadcasts more distinctly across continents via space. It has revolutionised the modern methods of communications.

(g) **Naptha** : is one of the derivates of petroleum, coal-tar or wood.

(h) **Laser** : (Light Amplification by Stimulated Emission of Radiation.)

It is a recent U.S. invention. It is a kind of electric torch, whose powerfully concentrated pencil like beam of light can penetrate through a steel girder or diamonds in a fraction of a second. Laser beam can be employed for welding eye cornea, in the electronic industry and also for cutting metal sheets.

(i) **Pressurised Cabin** : A cabin that is maintained near normal atmospheric pressure during high level flight by means of a supercharger, *e.g.*, an aircraft cabin.

(j) **Seismograph** : also known as seismometer is an aparatus for measuring and recording earthquake shocks.

3. **Ans.** (a) Param Vir Chakra : The highest decoration for valour is the param Vir Chakra which is awarded for the most conspicuous bravery or some daring or pre-eminent act of valour or self sacrifice in the presence of the enemy whether on land, at sea or in the air.

This decoration is made of bronze and is circular in shape. It is worn on the left breast with a plain purple-coloured riband, an inch and a quarter in width.

Recepients of the award in 1965.

1. Lt. col. A. B. Tarapore (Posthumous)
2. C. Q. M. H. Abdul Hamid (Posthumous)

(b) Logistics : a branch of military science relating to the movement and supplying of armies. In the context of military operations, logistics means art of movement of troops exact calculation of attacks and defence, proper and timely supply of food arms and ammunition.

(c) Army : General P. P. kumarmanglam.
Navy : Vice Admiral A. K. chatterjee.
Air force : Chief Air Marshal Arjun Singh.

(d) Arjun Awards : The Awards are made on the basis of outstanding contribution made to enhance the glory of the game during the year. The Arjun Awards to the Sports of the year were instituted in 1961.
Recipients during 1966 :—

Dinesh Khanna (Badminton).
Vijay Manjarekar (Cricket).

Arun Lal Ghosh (Football).
Udham Singh (Hockey).
Balbir Singh Bhatia (weight lifting).

(e) Leader of the team which succeeded first in climbing Mount Everest :
Col. John Hunt.
Himalayan Mountaineering Institute, Darjeeling.

(f) (i) 1966 Wimbledon Singles Champion
(MEN) : MANUEL SANTANA

(ii) Captain of the winning team at the final of world Soccer Tournament—Bobby Moore.

(iii) The Swimmer who crossed the palk Strait : Mihir Sen.

(iv) The place where the Common wealth games were held in 1966-Wembley

(v) world heavy weight Champion-Casius Clay (Mohammad Ali) U. S. A. (Boxing)

(g) Mohan Bagan : Football
Pataudi : Cricket
Dinesh Khanna : Badminton
Merdka-Football
Vizzy : Cricket.

(h) Both the organizations-National Cadet corps (N. C. C.) and Territorial Army were established to arouse the interest of young men and women in the armed forces.

Both the organizations serve as a second line of defence. India can not afford to have a huge standing army so men from all walks of life receive military training during their spare time at a small cost, and they can be called upon to share the responsibility of defence in case of an emergency.

N. C. C. has been made compulsary at the University Stage from 1963.

The object of both the organizations is to develop the personality of the youth and to make them self reliant, to build them physique and to enable them to render assistance in national emergency.

A Sainik school is an instutition where children are trained under military discipline and are given lessons in Arts and Science.

(i) **The Olympic Games:** These Games were first held in 777 B.C by the Greeks in honour of God Zue at Olympus Mount in Greece, hence the name. They Continued till 394 A. D. They were held after every four years.

The games were revived by the French Baron, Pierre de Couberlin in 1894; the modern series started in 1896 at Athens, and since then they are being held after every four years.

They were held in places mentioned below :—

1896	Athens	1928	Amesterdam
1900	Paris	1932	Los Angles
1904	St. Louis	1936	Berlin
1908	London	1948	London
1912	Steckholm	1952	Helsinki
1920	Antwerp	1956	Melbourne
1924	Paris	1960	Rome
		1964	Tokyo

Rings in the Olympic Crest. The rings on the Olympic flag symbolised friendship. They are blue, yellow, black, green and red. They represent the continents of Eurasia (Europ and Asia), Africa, North America, South America and Australia.

4 Ans. (a) The basic point in India's foreign policy is to maintain friendly relations with all the nations of the world. She does not want to join any one power block and thus risk animosity with the other.

That is why her policy of non-alignment brought-forth aid both from Russia as well as the Western Powers, when her security was threatened by China in 1962.

(b) So far as the plebiscite for Kashmir is concerned India is never likely to agree to the same for the following (political and legal) reasons :-

(i) The conditions have completely changed now. Pakistan has illegally handed over 7000 sq. miles of Indian territory to China, which never belonged to her.

(ii) India knows it that Pakistan will rouse the people on religious sentiments. Any plesbicite on religious grounds will unleash a flood of communal frenzy in the rest of the country.

(iii) The Govt. of Pakistan has never carried out the first two parts of the U. N. resolution.

(iv) The State of Jammu and Kashmir is now permanently linked with India culturally, econmically and politically and no power on earth can ever separate her from the country.

The States accession to India has been complete, final and irre-vocable.

(c) India is of the view that the establishment of State of the Israel is nothing but an act of mischievous intentions of the American block. The Anglo-American block gave birth and to this puppet state only to keep the Arab world under their own thumb.

India's national self-interest also requires that she should not alienate the Arab world. Most of our export-earnings are due to the Arab-world. Moroever we need sympathisers and friends in the U. N.

India is convinced that the creation of Israel was an act of injustice which deprived lakhs of Arabs of their hearths and homes.

(d) It is very unfortunate that now a days the country is terribly faced with the language problem. Love with one's own province has become the present-day slogan in the country. Love for the whole country has almost vanished in this context. Every state wants its own language to be supreme though Hindi has been declared as the official language of the country.

In case the language problem is not solved with firmness, the country will be divided into so many autonomous linguistic States and people of one State will be completely strangers to those of other States.

It is sad that the unity and integrity of the country are being sacrificed on account of selfish linguistic rivalries.

5. Ans. (a) **Mandan Mishra** *:* Mandan Mishra was a great scholar who is remembered for his Shashtraratha with Shankracharya. He was defeated by Shankracharya.

(b) **Difference between a Tirathankar and a Bodhi Satva :**

A 'Tirthankar' is a Jain saint. There are 24 Tirathankars whom the Jains worship. The first Jain saint was Rishabhadeva, the twentythird Parsvanath and the last Mahavir. A 'Bhodhisatva' is the follower of Budhism according to which the highest goal of man's life is to attain *Nirwana* or salvation (mukti) *i.e.*, freedom from the circle of birth and rebirth.

(c) **Chhat Festival in Bihar** *:* It is a festival of the sun and is held in the month of *Kartik* on the 6th of the bright lunar period.

The worshippers observe fast and pay *arghya* in the evening. Next day early in the morning the *arghya* is offered to the rising sun.

(d) **Kudabaksh Librury** *:* also known as Patna Oriental Public Library possesses rare manuscripts on Persian calligraphy and Eastern art.

(e) **Chhau Dance** *:* 'Chhau' means mask. Hence the dancer—male or female cover their faces with masks during dance performances. These masks depict mythological characters. This dance has two forms *viz.* Pharikhand dance and the dance based on the rhythmic variations of 'Laya'. It is quite popular in the Singhbhum district of Bihar.

(g) **Nand Lal Bose** : A famous artist. Truly called the father of the modern painting in India. Awarded Padam Bhushan, died in April 1966.

(h) **The Todas** : They are an aboriginal tribe in the Nilgris, South India.

(i) **Mahapurush Shankardeo** : (b. 788). One of the greatest scholars of India. He was also a philosopher and religious teacher. He held religious debates with the Budhists and Jains. The fall of Budhism is attributed to his high scholorship. His doctrine is known as Advaitism. Wrote authoritative commentaries on Upnishadas.

(f) **Barabar Caves** : The Barabar caves date back to prehistoric period. Carved out of solid granite, they are amagingly polished.

6. (Ans.) (a) The Indian Parliament exercises control over expenditures by the Government through its three Committees *viz.* (i) Public Accounts Committee (ii) The Estimates Committee (iii) and The Public Undertakings Committee.

The Public Acoounts Committee scrutinizes the Appropriation Accounts of the Government of India and the report of the Camptroller and Auditor-General thereon. It ensures that Public money is spent in accordance with Parliaments decisions and calls attention to cases of waste, extravagance, loss, nugatory expenditure or lack of financial integrity in Public Services.

The Estimates Committee reports on what economies, improvements in organization, efficiency or administrative reform can be effected.

The Committee on Public undertaking examines the reports and accounts of certain specified public undertakings and reports of Auditor-General thereon, if any.

(b) **Vietnam and Vietcong** :—Vietnam was a part of former French Indo-China in South East Asia. The country is divided into two parts known as North Vietnam with Hanoi as its capital and South Vietnam having Saigon as its capital.

North Vietnam is a Communist state while South Vietnam is a western type democracy having the support of USA.

In South Vietnam there are communists known as VIET CONG who are supplied ammunition by their brothers in North Vietnam. They want to turn South Vietnam also into a Communist state.

But the Americans would not allow China spread its influence in this region.

In a determined effort to stop Viet Cong infiltration, to cut off their sources of supply, the U. S. A. has stepped up its war effort and the American planes are engaged in bombing targets in N. Vietnam.

(c) Mr. B. R. Sen is serving for two comsecutive terms as the Director General of the U. N. Food and Agricultural Organization

India's General Inder Jit Rikhey was the Commander of theU. N. Forces in Israel till the day when war broke out between the Arabs and the Israelis.

(d) **Congress** :—Two bullocks with yoke.
Jan Sangh : Lamp.
Swatantra : Five Pointed stars.
Communist Party of India : Ears of corn and Sickles.
Do (MARXIST) : Hammer, Sickle & Star.

(e) The seat of the International Court of Justice is at the Hague, in Netherland. Ghulam Mohammad, the ex-President of Pakistan is the Pakistani member of this court.

(f) First Secretary of the Communist Party of the U. S. S. R.—Leonid Breznev.
Prime Minister of the U. S. S. R.—Alxei Kosygin.

(g) Governor, Nagaland—Mr. Vishnu Sahai. (Mr. B. K. Nehru from Jannuary, 1968).
Chief Minister of Nagaland—Mr. B. P. Chaliha.
Capital of Nagaland—KOHIMA

[7] (a) The best way of inculcating mutual understanding of each other's culture is to exchange cultural troupes and artists off and on.

There should be cultural associations comprising of members from the North as well as the South. They should hold up-programmes, exchange views and take active part in each other's actvities.

[b] Following are the mass media of Commnnications. :—

[i] Broadcasting [ii] The Press [ii] Films [iv] Advertising and Visual Publicity & [v] Publications.

(a) **Broadcasting** [i] :—A Country wide scheme of Radio Rural Forums, providing listening-cnm-discussion-cum-action group programmes, launched in 1959, organized in villages which regularly discuss the weekly broadcasts and send their criticism and suggestions to the radio stations concerned.

(ii) A Farm and Home unit has been set up at head quarters to give appropriation guidance on planning and presentation of Farm and Home programmes.

(iii) Educational programmes for schools are being broadcast from 25 stations for a duration of 20–40 minutes on five to six days in a week. Programmes addressed to students of Universities consist of talks and discussions on subjects of academic interest. Close liaison is maintained with the University through listening forums set up to build up sustained interest in these programmes.

Special programmes for women and children are also broadcast. Information on house keeping, child care, nutrition, mental health etc, is given. Talks, dialogues, short stories plays, features and quiz programmes are broadcast in programmes meant for children.

(iv) Programmes for industrial workers are also broadcast at convenient timings from Delhi, Madras, Bombay, Calcutta, Ahmedabad Lucknow, Vijyawada, Allahabad, Ranchi, Nagpur, Banglore & Hyderabad.

They are meant to provide information and entertainment to industrial workers and in particular to acquaint them with the laws and problems of industrial establishments.

The Press. Informations regarding the policy, plans, achievements and other activities of the Government of India is made available to the people through the press. All this is done by the Press Information Bureau.

Films The Films Diuision produces news reels, documentaries, educational and scientific films.

Interesting events within and outside India are included in the weekly Indian News Review. Every cinema is required under the terms of its licence to exhibit at each performance not more than 2000 ft. of films approved by the authorities as documentry films, films of educational and scientific value.

Pubiications :—The Publications Division is responsible for the preparation, production, distribution and sale of books of general interest, popular pamphlets, pictorial albums, journals etc. for providing authentic information about the country's cultural heritage, activities of the Government, progress of development programmes and places of tourist interests.

Advertising and Visual Publicity :—It is responsible for the planning, designing and production of publicity material on behalf of the various Ministries and Departments [excepting Railway].

[c] Folk culture makes the people conscious of their cultural heritage which makes life better and noble.

Works of art bring pride to society. The artists do immense good if their works depict truly the social needs of the day.

The present day cry of the country is unbiased literature, music, painting. Hence to preserve our folk culture is as important as the expansion of Industries. and this can be easily done consistently with the needs of industries.

(d) With disappearance of Princes and the landed arstocracy, patronage of music and the fine arts has, no doubt, passed on to the state, but the advantages are more numerous than the disadvantages.

The state has established several national academies e. g. Sangeet Natak Academy, Lalit kala Academy and Sahitya

Academy to promote, encourage and inculcate art consciousness among the people.

The Lalit Kala Academy promotes the development of fine arts and undertakes programmes of work for the growth and nourishment of painting, sculpture and other graphic arts. It also encourages exchanges of ideas among various school of art. It also fosters inter regional and international contacts through exhibitions, exchanges of personnel and of art objects.

Sangeet Natak Academy directs its activities to the fostering of dance, drama and music. It promotes research, encourages setting up of theatre centres and training institutions, organise seminars and festivals, awards prizes and fosters cultural exchanges.

The Sahitya Akademy is an organzation to work actively for the development of Indian letters and to set high literary standards, to foster co-ordinate literary activities all the activities in a l the Indian languages and to promote through them cultural unity of the country,

All this was not possible when patronage of arts rested with the princes. Music and the fine arts. during their time, flourished only in a limited space.

The Govt. of India has established an Indian Council for Cultural Relations with the object of establishing, reviving and strengthening cultural relations between India and other countries. This was never possible during the period of rulers and princes.

The only disadvantages of the State patronage of the arts is that it does not give maintenance to an outstanding artist for the whole of his life, It only gives a fixed sum of money to an artist of repute in the form of national awards. The artists under the patronage of the princes had never to bother about their livlihood, hence they could devote all their energies to the devlopment of thair skill in their particular fields.

8 (a) **Ananda Coomarswamy.** A famous critic of painting and sculpture. He was curator of an American museum.

(b) **Kashi Prasad Jayaswal.** A renowned Historian. The Kashi Prasad Jayaswal Research Institute for promoting knowledge of Indian History and Culture has been established in his honour.

Homi Bhabha. Dr. Homi Jehangir Bhaba was Chairman, Atomic Energy Commission of India till his death on account of plane crash in 1966. He was a famous physicist. He published papers on cosmic rays and Quaintum Theory. Was awarded a National Scholarship in 1958-

(d) **Vasudeo Sharan Aggarwal.** A great philosopher, thinker and writer, Vasudev Sharan aggarwal was a great scholar of Sanskirit. He has written commentaries on Vedas, Upnishdas and Geeta in simple language.

(e) **Tyagraja.** A great Saint musician of the South.

(f) **Rahul Shankartayan.** An eminent linguist, scholar, historian. Former President of Hindi Sahitya Sammelan. A widely travelled man, he wrote about 170 books.

(g) **Dr. Zhivago** : Written by Boris Pasternak, this is a controversial work which won the author Nobel Prize. But he had to decline on account of the objections by the Russian Government. This book gives us an idea of life in the Communist society. The author finds many faults with the Communist way of life.

(h) **Ram Chatur Malik** : An eminent musician and instrumentalist of Bihar.

(i) **R. K. Narayan** An eminent writer, recepient of Padma Bhushan and winner of Sahitya Academy Award for his book 'The Guide,' in which satire, comedy and tragedy are all magnificently blended to produce an enduring impression as the writer traces the progress in Raju's life from a rogue to that of a faked swami.

Many of his works are translated into French, German and other European languages. His other works : Mr. Sampat, Dark Room, The Bachelor of ARTS.

(j) **Ustad Alaudin Khan** - A renowned instrumentalist. Awarded Padma Bhushan in 1958.

1965

1. State briefly the distinctive features of India's struggle for independence and the results achieved. Is India's independence compatible with membership of the Commonwealth ? Give your reasons briefly.

2. What is the difference between a Unitary and a Federal type of Constitution ? What type of Constitution has India adopted and, in your view, will it help (a) to strengthen India's unity and (b) ensure rapid economic progress ? Give your reasons briefly.

3. Explain briefly what is meant by *any three* of the following :—

(a) Socialist Pattern of Society.
(b) Planned Economic Development.
(c) Secular Society.
(d) Community Development.
(e) Multi-purpose Projects.
(f) Parliamentary Democracy.
(g) Colonialism and neo-colonialism.

4. How would you define higher education ? In your view, should higher education in India be a State Government responsibility, a concurrent subject, or a Central Government responsibility ? Give your reason briefly.

5. What are the causes and effects of student indiscipline in the Universities and what measures would you suggest for dealing with this problem ?

6. Name those independent countries of Asia which are at present divided. Which Asian country was the first to become independent after the Second World war and which is the latest country to become independent ? Name the countries of Asia which have communist governments.

7. How would you define India's policy of non-alignment ? To what extent has it achieved its major objectives ? In your view, is there any change needed in the policy at present ? Give your reasons briefly.

8. Explain briefly what is meant by *any three* of the following :—

(a) Aid without strings.

(b) The Cold War.

(c) Newly emerging forces.

(d) Proletarian internationalism.

(e) Veto in the Security Coucil.

(f) Peaceful co-existence.

(g) Nuclear threat.

9. China has exploded a nuclear bomb. In your view, should India also do so, or should she continue to follow her peaceful nuclear policy ? Give your reasons briefly.

10. Write brief notes on *any five* of the following :—

(a) Tirupati; (b) Purandardas; (c) Amir Khusru; (d) Satyajit Ray; (e) Birsa Bhagwan; (f) Narlikar; (g) Kuchipudi; (h) Lichhavis; (i) Harappa; (j) Bahadur Shah 'Zafar'.

11. India is in conflict with both China and Pakistan. What are the causes of the conflict in each case ? Do you see any prospects of a settlement ? If so, with which country would it be easier for India to settle first ? Give reasons briefly.

12. What is meant by Afro-Asian solidarity ? Is this a desirable objective in itself and what are the obstacles in the way of its achievement ? Give your reasons briefly.

1964

1. (a) State *any five* of the Directive Principles of State Policy,

(b) Explain what is meant by the 'Right against Exploitation guaranteed under the Constitution'.

2. What important industry do you associate with the following places ? (Answer *any five*).

(a) Visakhapatnam, (2) Bhilai, (c) Trombay, (d) Ludhiana, (e) Coimbatore, (f) Bangalore, (g) Jalpaiguri, (h) Sindri, (i) Neyveli, (j) Anand.

3. Answer *any five* of the following :—

(a) Which statesman rose from long cabin to White House ?

(b) Who was the Lady with the Lamp ?

(c) Who gave his name to the system of embossed characters enabling the blind to read by touch ?

(d) Whose was 'the face that launched a thousand ships' ?

(e) Who made *Pather Panchali* ?

(f) After whom is the process of 'pasteurization' called ?

(g) Who succeded Pope Pius XII ?

(h) Who is the Chief Minister of Madras ?

(i) Who is the Governor of Orissa ?

[j] Which two scientists caused a stir with a startling new theory on laws of graviation in 1964 ?

4. What do the following expressions signify ? [Answer *any five*]

[a] Molotov Cocktail, [b] Indian Bradshaw, [c] *A la carte*, [d] *Subjudice*, [e] The Hansard, [f] Subpoena, [g] *ex past facto*, [h] Safari, [i] *de novo*, [j] Hi-fi,

5. In which cities are the following situated ? [Answer *any five*.]

[a] Char-Minar. [b] Fleet Street, [c] Kowloon, [d] Red Square, [e] Hazratganj, [f] Broadway, [g] Chowringhee, [h] Jallianwala Bagh, [i] Hawa Mahal, [j] Chandni Chowk.

6. Discuss, in not more than ten lines each, *any two* of the following :—

[a] Jawaharlal Nehru as world statesman.

[b] The problem in Cyprus.

[c] Future of the Commonwealth.

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7. What do the following terms signify ? (answer) *any fiive.*)

(a) Astrophysics, (b) Nuclear Fission, (c) Euthanasia, (d) photosynthesis. (e) Ianosphere, (f) Egyptology, (g) Fall-out, (h) Ornithology, (i) Telecommunication, (j) Zodiac.

8. What do the following abbreviations stand for (Answer *any five.*)

(a) U. N. E. S. C. O., (b) B. O. A. C.(c) N. A. A. C. P., (d) M. R. C. P., (e) N. E. R, (f) D. M. K., (g) U. A. R., (h) R. S. V. P. (i) G. A. T. T., (j) Ph. D.

9. Answer *any five* of the following:—

(a) What forms of power are used by Indian railways ?

(b) Name the first all-jet superssonic aircraft built in India.

(c) Where is the first public planetorium in India located ?

(d) What is left when uranium loses its radioactivity ?

(e) What does a transistor radio run on ?

(f) How broad is the broad gauge in India railways ?

(g) What is a 'wet' battery ?

(h What are lead pencils made of ?

(i) Why is it necessary to have very high speeds for space travel ?

(j) Why do people like to sing in their baths ?

10. Answer *any five* of the following:—

Who said ?—

(a) 'The ballot is stronger than the bullet"

(b) *Et tu, Brute* !'

(c) 'A university should be a place of light, of liberty and of learning.'

(d) 'She was married, charming, chaste and twenty-three.

(e) 'Extremism in the defence of liberty is no vice; moderation in the pursuit of justice is no virtue.'

Which well-known authors have created the following characters ?—

(f) Sherlock Holmes. (g) Loha Singh. (h) Hercule Poirot. (i) Jeeves. (f) James Bond.

11. Answer *any five* of the following:—

(a) In what year were the Olympic Games held in Berlin Melbourne/ London ?

(b) Who won the Olympic hockey championship in 1964/ 1960/ 1956 ?

(c) An Indian track athlete bettered the previous Olympic record in 400 metres at Rome: can you name him ?

(d) Which two players contested the 1964 Men's Singles Final at Wimbledon?

(e) What was the exact date of the ascent of Mt. Everest by Edmund Hillary and Tenzing Norkay?

What do the following connote?—

(f) White collar, (g) Blue blood, (h) Brown study, (i) Green room, (j) Red rag.

12. Discuss, in not more than ten lines each, *any three* of the following:—

(a) Truce in Nagaland. (b) Holding the Price Line. (c) Problem of Indians in Ceylon, (d) Priorities in the Fourth Five-Year Plan. (e) Campaign against corruption.

1963

Q. 1 (a) State any five of the fundamental rights guaranteed to all citizens under the Constitution of India.

(b) How have the fundamental rights been affected by the declaration of a state of emergency ?

Q. 2. Discuss, in not more than five lines each, any three of the following :—

(a) Sino-Soviet Rift, (b) The 'hot' line agreement, (c) Malaysia, (d) Race riots in the U. S. A,, (e) Sanctions against South Africa.

Q. 3. Assign the dates of any five of the following events:—

(a) Launching of the 'Quite India' movement.

(b) The assassination of Mahatma Gandhi.

(c) The Chinese attack on India.

(d) The third general election in Bihar.

(e) The Bihar Earthquake.

(f) The last Presidental Election in the U. S. A.

(g) The United Nations Day.

(h) Christmas Day. (i) Guy Fawkes Day. (j) All Fools Day.

Q. 4. Answer any five of the following:—

(a) How does a lunar eclipse occur ?

(b) How would you convert Fahrenheit temperature into Centigrade ?

(c) What is the normal temperature of a human body ?

(d) Why is there an extra day in a leap year ?

(e) How is a rainbow formed ?

(f) Why does ice float on water ?

(g) Why do we see the flash of lighining before we hear the sound of thunder ?

(h) What is the height of Mt. Everest in meters ?

(i) What time does it take for the sun's light to reach the earth ?

(j) What is frost-bite ?

Q. 5. Select *any five* from among the following and state what they are/were know for :—

(a) Subhas Chandra Bose (b) Jamshedji Tata, (c) Khan Abdul Ghaffar Khan, (d) Vallabhbhai Patel, (e) Ramanujam, (f) Dag Hammarskjold, (g) Albert Schweitzer (h) Averell Harriman, (i) Arnold Toynbee, (j) Sigmund Freud.

Q. 6. Discuss, in not more than seven lines each, the impact of any two of the following on the social and eco nomic life of India :—

(a) Public Sector (b) Bhoodan (c) Prohibition.

Q. 7. Name *any five* of the following :—

(a) Chairman of the Rajya Sabha.
(b) Chief Justice of India.
(c)Director-General of F. A. O.
(d) Deputy Speaker of the Lok Sabha.
(e) Union Minister for Steel and Heavy Industry.
(f) Chancellor of West Germany.
(g) Prime Minister of Nigeria.
(h) Foreign Minister of the U. S. S. R.
(i) The first woman cosmonaut.
(j) The last Governor-General of India.

Q. 8. What do the following terms signify ? (Answer *any five*).

(a) Metabolism (b) Antibiotic (c) Electrocardiogram (d) Capillary action (e) Catalytic agent (f) Seismometer (g) Short Circuit (h) Heavy water (i) Green manure (j) Radar.

Q. 9. What do you understand by the foliowing (Answer any five).

(a) Diplomatic immunity (b) Pakin's law (c) E. C. M. (d) I. C. B. M. (e) Lbw (f) Apartheid (g) Personal non-grata (h) Habeas corpus, (i) Espionage (j) Power of Attorney.

Q. 10. Name the authors of any five of the following :—

(a) Guru Granth Sahib (b) Gita Govinda (c) My Experiments with Truth (d) Rubaiyat (e) Poradise Lost (f) A Tala of Two Citses (g) Doctor's Dilemma (h) The Waste Land (i) The Ugly American (f) Dr. Zhivago.

Q. 11. Where are the following and what is their importance ? (Any five).

(a) Berubari (b) Plain of Jars (c) Panjim (d) Bomdila (e) Trisuli (f) Dandakaranya (g) Wimbledom (h) Chittaranjan (i) Amarnath (j) Cape Canaveral.

Q. 12. Classify the celebrities named below under heads: (a) men of letters (b) scientists (c) artists :—

C. V. Raman, Vallathol, Shiva Pujan Sahay, Homi J. Bhabha, Amrita Sher Gil, J. C. Bose, Pankaj Kumar Mullick, Mulk Raj Anand, Prithvi Raj Kapoor, Jamini Roy.

1962

Q. 1. Answer, in not more than seven lines each, any two of the following :—

(a) Why is India not in favour of the U.K. joining the European Common Market ?

(b) Why has there been a deterioration in Indo-Chinese relations ?

(c) Why have there been repeated demonstrations of students in Dacca ?

Q. 2. Name any five of the following : [In parts (a), (b), (e), (f), (h), (i), (j) only the second half of the name is wanted.]

(a) The supreme NATO new Allied Commander in Europe.

(b) The U.K.'s Chancellor of the Exchequer.

(c) The President of Burma.

(d) The Prime Minister of the new Coalition Government in Laos.

(e) The assassin of Ceylon's Prime Minister, whose death sentence has been confirmed.

(f) The new Vice-President of India.

(g) The Speaker of the Lok Sabha.

(h) India's High Commissioner in the U.K.

(i) The leader of the Second Indian Expedition to Everest.

(j) The first American to orbit the earth.

Q. 3. What do the following abbreviations stand for ? Answer any five.

(a) viz. (b) A.D. (c) A.D.C. (d) IAC. (e) M.D. [f) MD. (g) J.P. (h) OAS. (i) DMK. (j) SEATO.

Q. 4. Insert the appropriate word or two words in the blank space left in any five of the following sentences :—

(a) The crowd which bade farewell to the...........team at Melbourne was the largest ever seen in cricket history.

(b) The setting free of Dr. Jomo.........this year has been hailed as the greatest defeat of British Imperialism in Africa.

(c) During the year 1961-62 only two military coups were unsuccessful, namely in Ceylon and in.........

(d) This year the Bengali feature film...has been awarded the President's gold medal.

(e) Miss Universe is N.B. Nolan of........, crowned at Miami Beach.

(f) Miss B.J........., who beat Margaret Smith this year, has created the biggest upset in Wimbledon's 85 years' history.

(g) Though magnificently robed, the Archbishop of Canterbury is enthroned in a chair of......

(h) All 94 passengers and crew perished in the crash of an Alitalia Airliner in the......Hills.

(i) 71 passengers were killed when the Amritsar-Howrah Mail crashed into a goods train at......Railway Station.

(j) Oil of good quality has been found in......village, 18 miles north of Ahmedabad.

Q. 5. Fill in the appropriate figure in the blank space left in any five of the following sentences :—

(a) The President of the U.S.A. is elected for a term of... years.

(b) The Russian athelete, V. Bromel, has jumped 7 feet... inches high, which is an incredible new world record.

(c) A crore of rupees is the figuer 1 followed by....zeroes.

(d) First class sleeping accommodation in Indian trains can be reserved up to......days in advance.

(e) The number of national languages recognized by the Indlan Constitution is........

(f) Geneva's Disarmament Conference is a.........nation conference.

(g) The wheel in India's natioaal flag has......spokes.

(h) The fine for the wrong use of pulling the alarm chain in an Indian railway is Rupees......

(i) The Second Indian Expedition to Everest failed to reach the summit only by......feet.

(j) The Bhakra-Nangal dam has attained a height of...... feet.

Q. 6. Give the literal (derivative) meaning of the Italicized words in any five of the following :—

(a) *Satyameva jayate.* (These words are written under the emblem of India). (b) The *Vedas.* (c) *Lok Sabha.* (d) *Sikh.* (e) Mustafa Kamal *Ataturk.* (f) *Allahabad* (g) Baji Rao *Peshwa.* (h) *Fuehrer.* (i) *Viva voce* Examination. (j) *December.*

Q. 7. Who signs the following ? (Answer any five.)

(a) The credentials which an amhassador presents.

(b) The salary cheques paid to India's ambassadors abroad.

(c) The passport issued to a resident of U.P. going abroad

(d) The currency notes issued by the Government of India.

(e) The money bills passed by the Lok Sabha.

(f) The certificate awarding an honorary D. Litt. degree.

(g) The report of a post-mortem conducted in an Indian district.

(h) The notice that a prisoner sentenced to be hanged has been hanged in a jail.

(i) The railway concession forms passed by a railway finally.

(j) The receipt of a box kept in a bank's safe custody.

Q. 8. Where are the following and what makes them interesting to pilgrims and tourists ? (Answer any five).

(a) Sarnath. (b) Ellora caves. (c) Nalanda. (d) Rameshwaram temple. (e) Konark temple. (f) Jodhbai's palace. (g) Gol Gumbaz. (h) Goa. (i) Nander. (j) Raj Ghat

Q. 9. Give in one word the title of any five of the following (Do not use the word 'King' or 'Emperor'.)

(a) The ruler of Japan. (b) The ruler of Ethiopia. (c) The ruler of Iran. (d) The ruler of Sikkim. (e) The ruler of Saudi Arabia. (9)The ruler of Oman.,(g) The ruler of Vatican City. (h) The ex-ruler of Gwalior. (i) The ex-ruler of Baroda. (j) The head of the German Federal Republic.

Q. 10. Answer in not more than four lines each :—

(a) Why has Iraq broken off diplomatic relations with the U. S. A. ?

(b) Why has Afghanistan broken off diplomatic relations with Pakistan ?

(c) Why has Prime Minister Macmillan replaced one-third of the members of the Conservative Cabinet ?

Q. 11. Select any five of the following books and name the author in each case. (Give only the second half of the name.)

(a) Republic (b) Arthashastra (c) Meghaduta (d) Gulistan (e) Macbeth (f) Social Contract (g) The Decline and Fall of the Roman Empire (h) Das Kapital (i) Paradise Lost (j) Gitanjali.

12 (a) What important events in Indian history occurred on the following dates :—

(i) 326 B.C. (ii) 1761 A.D. (iii) 1942 A.D. (iv) 1948 A.D. (v) 1950 A.D.

(b) Assign dates to the following events :—

(i) The death of Akbar the Great.

(ii) The Battle of Yorktown which made America independent.

(iii) The Battle of Waterloo.

(iv) The Battle of Gettysburg and abolition of slavery in America.

(v) The Partition of India.

Q. 13. In which games or sports are the following terms used ? (Answer any five) :—

(a) Stymied (b) No ball (c) Offside (d) Cannon (e) Grand Slam (f) Bull's eye (g) Dead heat (h) Stone walling (i) Sticks (j) Seconds out.

1961

Answer any ten questions.

Q. In not more than ten lines, describe any five Fundamental Rights of citizens, according to the Iudian Cnstitution.

Q. 2. In not more than seven lines each, describe any two of the following:—

(a) The State visit of Queen Elizabeth II to India and the reason which made it so popular.

(b) The orbiting of the earth by Major Yuri Gagarin.

(c) The flight into space by the Cr. Alan Shephard.

Q. 3. What do the following abbreviations stand for ? (any five).

F.R.S. : F.R.C.S. : R.S.V.P. : I.O.U. : A.P.I. : WIMCO. : S.O.S. : M.C.C. : MCC. : Q.E.D.

Q. 4. Name any five of the following:—

(a) Vice President of the U.S.A.

(b) Right-wing Laotian Prime Minister.

(c) President of the Republic of South Africa.

(d) Murdered Premier of the Congo.

(e) Indian Union Home Minister.

(f) Ambassador of India to France.

(g) President of the Utkal Pradesh Congress.

(h) Chief Minister of Uttar Pradesh.

(i) Speaker of the Kerala Assembly.

(j) Nazi leader now undertrial in Jerusalem for genocide.

Ans. [a] H. H. Humphery 1965.

[b[Prince Boun Own, 1961.
[c] Charles Swart, 1961.
[d] Patrice Lumumba.
[e] Gulzari Lal Nanda, 1965.
[f] Rajeshwar Dayal, 1965.
[g] B. Patnaik, 1961.
[h] Sucheta Kripalani, 1965.
]i] Presidents' Rules, 1965.
[j] Adolf Eichmann.

Q. 5. What is the precise meaning of the italicised words according to their derivation ? (any five) :—

(a) Gautam *Budha*, (b) *Mahatma* Gandhi, (c) *Sadr-i-Riyasat* of Jammu and Kashmir, (d) The *Punjab*, (e) *Jana gana mana*, (f) The *Parsis* of India, (g) *Elephanta* caves, (h) The English *Alphabet*, (i) The *Mediterranean* Sea, (j) *America*.

Ans. [a] Enlightened, [b] Great Soul. [c] Head of a kingdom. [d] Five waters [river]. [e] Minds of all people [f] Inhabitants of Persia. [g] Elephant like. [h] Alpha, beta. [First two letters of Greek Alphabets. [i] In the middle of the land [j] From Amerigo Vespucci.

Q. 6. Name the following [any five] :—

[a] The two Indians who received the Nobel Prize.

Ans. [i] Rabindra Nath Tagore, [ii] C. V. Raman.

[b] The two Indian centenarians who were awarded Bharat Ratna.

[c] The two Sayyid brothers known as king-makers in Indian history.

[d] The two Indians, mother and daughter, who became Governors in India.

[e] The two Indians, father and son, who became Presidents of the Indian National Congress.

Ans. [i] Pandit Moti Lal Nehru, [ii] Pandit Jawaharlal Nehru.

[f] The two Germans, one of whom started the First World War and the other, the Second World War.

[g] The two Russians whose bodies have been emblamed and preserved in Moscow.

[h] The two persons who remain buried in the Taj Mahal at Agra.

[i] The two world-famous caves in the district of Aurangabad.

[j] The two oceans which meet at the Cape of Good Hope.

Ans. [i] Indian Ocean, [ii] Atlantic Ocean.

Q. 7. Name the place and State in India where any five of the following are located :—

[a] Forest Research Institute.

[b] Hindustan Antibiotics.

[c] Hindustan Shipyard.

[d] The First Atomic Reactor.

[e] Indian Dairy Research Institute.

[f] Indian Lac Research Institute.

[g] Bhandarkar Oriental Research Institute,

[h] Vikram University.

[i] Jodh Bai's Palace.

[j] Black Pagoda.

Ans. [a] Dehradun [U.P.], [b] Pimpri [Bombay], [c] Visakhapatnam [Andhra Pradesh], [d] Trombay [Bombay], [e[Banglore [Mysore], [f] Ranchi [Bihar], [g] Poona [Bombay], [h] Bhopal [M.P.], [i] Fatehpur Sikri [U.P.], [j] Konarak close to sea-coast, North of Puri [Orrissa].

Q. 8. In about six lines each, describe the following :—

[a] Three- Unit Kosi Project.

[b] The Indian National Flag. When was it first displayed and when is its use unrestricted ?

Q. 9. Explain any five of the following :—
Stop Press, Nobel Prizes, Security Council, Civil Disobedience, Referendum, Tariff Wall, Doyen of Ambassadors, Dead Letter, Cold War, Privy Purse.

by use of political and economic strategy, false propaganda and other measures short of war.

Q.10 Fill in the appropriate word or figure in any five of the following sentence :—

(a) The Indus Waters Treaty was signed in the city of...

(b) The..............tunnel in Kashmir is India's longest tunnel.

(c) An Indian team led by Lt. M. S..........successfully climbed Mt. Annapurna III.

(d) Under the Nehru-Noon agreement....................is to be transferred to Pakistan.

(e) Because of her...........policy, South Africa had to leave the British Commonwealth.

(f) King Hussain of Jordan married the English girl, Miss A.A......................

(g) A large oil-field comparable to that of Ankleshwar, has been struck at...........near Ahmadabad.

(h) Within the last ten years, the population of India has risen by........million.

(i) A junta of.........French generals attempted a coup in Algeria.

(j) The Hindustan Steel Ltd. manages.........steel plants with a capital of 300 crores of rupees.

Ans. [a] The Indus Water Treaty was signed in the city of *Lahore.*

[b] The *Banihal* tunnel in kashmir is India's longest. tunnel.

[c] An Indian team led by Lt. M.S. *Kohli* successfully climbed Mt. Anapurna III.

]d] Under the Nehru-Noon agreement, *Berubari* is to be transferred to Pakistan.

[e] Because of her *apartheid* policy, South Africa had to leave the British Commonwealth.

[f] King Hussain of Jordan married the English girl, Miss Ava. *Gardner*.

[g] A large oil-field comparable to that of Ankleshwar, has been struck at *Kalol* near Ahmedabad.

[h] Within the last ten years, the population of India has risen by 7.6 Million.

[i] Junta of OAS French generals atempted a coup in Algeria.

[j] The Hindustan Steel Ltd. manages *Three* steel plants with a capital of 300 crores of rupees.

Q. 11 Select any five of the following and name the author in each case:—

(a) Ramayana, (b) Zend-Avesta, (c) Vikramovasiya, (d) The Divine Comedy, (e) Akbar Namah, (f) The Tempest, (g) Vande Matran (song), (h). The Golden Threshold (i) Discovery of India, (j) India wins Freedom.

Ans. (a) Valmiki, (b) The sacred boo- of Parsis, (c) Kalidas, (d) Dante, [e] Abul Fazl, [f] William Shakespeare, [g] Bankim Chandra Chatterji, [h] Sarojini Naidu, [i] Jawaharlal Nehru [j] Abul Kalam Azad.

Q. 12 (a) What important events in Indian History occurred on the following dates ?

(i) 261 B. C. (ii) 606 A.D. (iii) 1556 A.D. (iv) 1858 A.D. (v) 1952 A.D.

Ans. (i) Conquest Kalinga by Ashok the great.

(ii) Coronation of Harshvardhan.

(iii) Second Battle of Panipat, Akbar came to the throne.

(iv) East India Company dissolved and the Crown took the administration in its hand.

(v) First Indian General Election held.

(b) Assign dates to the following events in Indian history (All of them are in A.D.).

(i) Vijanagar kingdom founded,
(ii) Death of Shivaji.
(iii) Birth of Mahatma Gandhi.
(iv) Conquest of Everest by Hillary and Tensing.
(v) French settlements in India passed under Indian Control.

Ans. (i) 1939 A.D. (ii) 1680, (iii) 1869, (iv) 1953, (v) 1954.

QUESTIONS SET AT THE VARIOUS COMPETITIVE EXAMINATIONS WITH ANSWERS

Abbreviations
Historical Data
Books And Authors
Indian Defence
Everyday Science
Inventions And Discoveries
National Laboratories, Scientific Research
Institutes And Industrial Undertakings
The Firsts and the Lasts
Association of Places
Well known Artists
Sports
Who's Who

GENERAL KNOWLEDGE

ABBREVIATIONS

Q. 1. What do the following abbreviations stand for ?

(i) U.S.S.R., (ii) I.N.T.U.C., (iii) M.A., (iv) B.O.A.C., (v) E.C.A.F.E., (vi) F.A.O., (vii) I.L.O., (viii) I.O.U., (ix) P.W.D., (x) N.E.F.A., (xi) M.L.A., (xii) U.N.O., (xiii) U.G.C., (xiv) U.S.I.S. and (xv) O.I.G.S. (N.D.A. May '67)

Ans. (i) Union of Soviet Socialist Republics, (ii) Indian National Trade Union Congress, (iii) Master of Arts, (iv) British Overseas Airways Corporation, (v) Economic Commission for Asia and Far East, (vi) Food and Agriculture Organisation, (vii) International Labour Organisation, (viii) I owe you, (ix) Public Works Department, (x) North East Frontier Agency, (xi) Member Legislative Assembly, (xii) United Nations Organisation, (xiii) University Grants Commission, (xiv) United States Information Service, (xv) On Indian Government Service.

Q. 2. What do the following abbreviations stand for ?

(a) N.C.C., (b) B.O.A.C., (c) C.S.I.R., (d) N.A.T.O., (e) I.A.S., (f) F.R.S., (g) P.S., (h) I.N.A., (i) U.G.C., (j) U.A.R.

(UPSC Clerks' Grade June '67)

Ans. (a) National Cadet Corps, (b) British Overseas Airways Corporation, (c) Council of Scientific and Industrial Research, (d) North Atlantic Treaty Organisation (e) Indian Administrative Services, (f) Fellow of the Royal Society, (g) Post Script (*written after*), (h) Indian National Army, (i) University Grants Commission, (j) United Arab Republic.

Q. 3. Give the full forms of :—

(i) ECAFE, (ii) INTUC, (iii) YMCA, (iv) NEFA and (v) ECM. (S.C.R.A. June '67)

Ans. (i) Economic Commission for Asia and Far East, (ii) Indian National Trade Union Congress, (iii) Young Men's Christian Association, (iv) North East Frontier Agency, (v) European Common Market.

Q. 4. What do the following abbreviations stand for ?

[i] B.O.A.C., [ii] E. & O.E-, [iii] R.S.V.P., [iv] e.g., [v] UNESCO. [Stenos' June '67]

Ans. [i] British Overseas Airways Corporation, [ii] Errors and Omissions Excepted, [iii] *repondez s'il vous plait* [Fr.] reply, if you please, [iv] *exempli gratia.* for example, [v] United Nations Educational, Scientific and Cultural Organisation.

Q. 5. What do the following abbreviations stand for ?

[i] UNESCO, [ii] SEATO, [iii] BCG, [iv] IST, [v] P.V.C. [Assts. Grade Feb. '67]

Ans. [i] United Nations Educational, Scientific and Cultural Organization, [ii] South East Asia Treaty Organization, [iii] Bacillus Calmette Guerin—Anti-Tuberculosis Vaccine, [iv] Indian Standard Time, [v] Param Vir Chakra.

Q. 6. What do the following abbreviations stand for ?

[i] I.A.C., [ii] G.A.T.T., [iii] E. & O.E., [iv] U.S.S.R., [v[F.R.C.S., [vi] P.V.C., [vii] I.B.R.D., [viii] U.N.E.S.C.O., [ix] F.A.O., [x] M.C.C., [xi] G.M.T. and [xii] N.E.F.A.

[I.M.A. May '67]

Ans. [i] Indian Airlines Corporation, [ii[General Agreement on Tariffs and Trade, [iii] Errors and Omissions Excepted, [iv] Union of Soviet Socialist Republics, (v) Fellow of the Royal College of Surgeons, [vi] Param Vir Chakra, [vii] International Bank of Reconstruction and Development, [viii] United Nations Educational, Scientific and Cultural Organisation, [ix] Food and Agriculture Organisation [x] Merylebone Cricket Club (of England), (xi) Greenwich Mean Time, (xii) North East Frontier Agency.

Q. 7. What do the foilowing abbreviations stand for ?

(i) G.M.T., (ii) D.O., (iii) D.L.O., (iv) A.I.T.U.C., (v) D.M.K., (vi) W.H.O. (N.D.A. Dec. '66)

Ans. (i) Greenwich Mean Time, (ii) Demi-official (letter), (iii) Dead Letter Office, (iv) All-India Trade Union Congress, (v) Dravida Munnetra Kazhagam (*a political party*). (vi) World Health Organisation (*of U.N.*).

Q. 8. What do the following abbreviations stand for ?

(i) I.P.Y., (ii) I.U.C.D., (iii) A.M. and [vi] UNIPOM.

[I.T.O. Dec. '66]

Ans. [i] India Productivity Year; [ii] Inter-Uterus Contraceptive Device; [iii] Ante Meridiem; [iv] United Nations Indo-Pakistan Observers' Mission.

Q. 9. Expand any five of the following :—

(i) C.S.I.R., (ii) I.N.T.U.C., (iii) I.A.C., (iv) I.A.S., (v) P.M.G., (vi) A.I.R., (vii) N.E.F.A., (viii) O.N.G.C.

(P. & T. Engg. Supervisors' 1966)

Ans. (i) council of Scientific and Industrial Research, (ii) Indian National Trade Union Congress, (iii) Indian Airlines Corporation, (iv) Indian Administrative Service, (v) Post Master General, (vi) All India Radio, (vii) North East Frontier Agency, (viii) Oil and Natural Gas Commission.

Q. 10. What do the following abbreviations stand for ?

(i) C.I.D., (ii) I.A.S., (iii) I.N.A., (iv) G.T. Express, (v) T.V., (vi) H.M.V., (vii) U.P.S.C., (viii) U.A.R., (ix) U.S.I.S., (x) N.C.O. and (xi) O.I.G.S. (N.D.A. May 1966)

Ans. (i) Criminal Investigation Department, (ii) Indian Administrative Service, (iii) Indian National Army, (iv) Grand Trunk Express, (v) Television, (vi) His Master's Voice, (vii) Union Public Service Commission, (viii) United Arab Republic, (ix) United States Information Service, (x) Non-Commissioned Officer, (xi) On Indian Government Service.

Q. 11. What do the following abbreviations stand for ?

(i) E.C.M., (ii) F.A.O., [iii] N.A.T.O., [iv] S.E.A.T.O., [v] I.M.F., [vi] U.N.E.S.C.O. [Indian Navy Dec. '66]

Ans. [i] European Common Market, [ii] Food and Agriculture Organisation, [iii] North Atlantic Treaty Organisation, [iv] South East Asia Treaty Organisation, [v] International Monetary Fund, [vi] United Nations Educational, Scientific and Cultural Organisation.

Q. 12. What do the following abbreviations stand for ?

[i] O.N.G.C., [ii] B.B.C., [iii] U.A.R., [iv] U.S.I.S., [v] I.B.R.D. [S.C.R.A. June 1966]

Ans. [i] Oil and Natural Gas Commission, [ii] British Broadcasting Corporation, [iii] United Arab Republic, [iv] United States Information Service, [v] International Bank of Reconstruction and Development.

Q. 13. What do the following abbreviations stand for ?

[i] U.G.C., [ii] C.S.I.R., [iii] E.C.A.F.E., [iv] N.E.F.A., [v] U.N.E.S.C.O., [vi] R.S.V.P., [vii] G.A.T.T., [viii] U.S.A.I.D., [ix] I.N.T.U.C., [x] D.V.C. [Income-tax Inspectors' 1966]

Ans. [i] University Grants Commission, [ii] Council of Scientific and Industrial Research, [iii] Economic Commission for Asia and Far East, [iv] North East Frontier Agency, [v] United Nations Educational, Scientific and Cultural Organisation. [vi] repondez s'il vous plait [Fr.] Reply, if you please, [vii] General Agreement on Tariffs and Trade, [viii] United States Agency for International Development, [ix[Indian National Trade Union Congress, [x] Damodar Valley Corporation.

Q. 14. What do the following abbreviations stand for ?

[i] T.V.A., [ii] P.V.C., [iii] I.C.A.R., [iv] I.A.C., [v] l.b.w., [vi] C.A., [vii] F.R.C.S., [viii] M.S., [ix] P.S., [x] S.O.S.

(I.M.A. June '66

Ans. [i] Tennessee Valley Authority, [ii] Param Vir Chakra, [iii] Indian Council of Agricultural Research, [iv] Indian Airlines Corporation. [v] leg before wicket, [vi] Chartered Accountant, [vii] Fellow of the Royal College of Surgeons, [viii] Manuscript, [ix] Post Scriptum [written after], [x] Save Our Souls [a distress signal].

HISTORICAL DATA

Dates and Events

Q. 1. Why are the following dates important ?

(i) 606, 1498, 1885, 1905 (Indian history)
(ii) 1688, 1776, 1805, 1956 (World history)

(S. C. R. A. June' 67)

Ans. (i) 606—Beginning of the reign of Harshavardhana. 1498—Vasco de Gama discovered the sea-route to India via the Cape of Good Hope ; arrived at Calicut. 1885—Indian National Congress founded by A. O. Hume. 1905—First partition of Bengal (during the Viceroyalty of Lord Curzon).

(ii) 1688—Bloodless or Glorious Revolution in England. 1776—Declaration of American Independence on July 4. 1805—Battel of Traflagar, 1956—Suez Canal nationalized by President Nasser ; British, French and Israeli forces attack Egypt.

Q. 2. Give the importance of the following dates in the national movement of India. (*Answer not to exceed 2 lines in each case*).

(i) 1885 (ii) 1906, (iii) 1929, (iv) 1947.

(UPSC Clerks' Grade June' 67)

Ans. (1885—Indian Nation Congress founded by A. O. Hume ; the first session held at Bombay under the Presidentship of W. C. Bonnerji. (ii) 1906—Formation of the All-India Muslim League. (iii) 1929—Congress resolution for complete independence (*Purna Swaraj*) in Lahore session under the Presidentship of Pandit Jawahar Lal Nehru. (iv) 1947—Partition of India, India achieves independence; creation of Pakistan ; Radcliffe Award.

Q. 3. Name the important event associated with the following dates:—

(i) 15th August, 1947, (ii) 30th January, 1948, (iii) 26th January, 1950. (iv) 27th May, 1964 and (v) 11th January, 1966.

(N. D. A. May' 67)

Ans. (i) Partition of India ; India achieves independence ; creation of Pakistan ; (ii) Assassination of Mahatma Gandhi ; (iii) India becomes a sovereign democratic republic ; (iv) Pt. Jawahar Lal Nehru passes away ; (v) Lal Bahadur Shastri passes away at Tashkent.

Q. 4. Give the years of the following events :—

(i) First Battle of Panipat, (ii) Burma became independent, (iii) Bandung Conference, (iv) Gandhi-Irwin Pact, (v) Quit India Resolution, (vi) Timur's invasion of India, (vii) Battle of Thaneswar, (viii) Irish Free State established, (ix) Partition of Bengal, (x) Death of President F. Roosevelt, (xi) Entry of Japan in the Second World War and (xii) Mutiny in the Royal Indian Navy.

(I.M.A. May '67).

Ans. (i) 1526, (ii) 1948, (iii) 1955, (iv) 1931, (v) 1942, (vi) 1398, (vii) 1191, (viii) 1921, (ix) 1905, (x) 1945, (xi) 1941, (xii) 1946.

Q. 5. Give the year of the following events :—

(i) Battle of Plassey, (ii) Death of Akbar, (iii) Battle of Haldighat, (iv) Accession of Harshavardhan, (v) Second Battle of Panipat.

(N.D.A. May '67)

Ans. (i) 1757, (ii) 1605, (iii) 1576, (iv) 606, (v) 1556.

Q. 6. Give the year in which the following events took place :—

(i) Chandragupta Maurya's accession to the throne, (ii) Timur's invasion of India, (iii) Birth of Shivaji, (iv) Establishment of the first factory at Surat by the East India Company, (v) The administration of India passed into the hands of the British Crown, (vi) The Resolution of Purna Swaraj was passed by the Indian National Congress.

(Stenos' June '67)

Ans. (i) 322 B. C. (ii) 1398 (iii) 1627 (iv) 1612 (v) 1858 (vi) 1929.

Q. 7. Give the year of the following :—

(i) Discovery of America by Columbus, (ii) Vasco da Gama's arrival in India by sea, (iii) Defeat of Spanish

Armada, (iv) Explosion of the first atom bomb. (v(Tragedy of Jallianwalabagh, (vi) Foundation of the Indian National Congress, (vii) Glorious Revolution of England, (viii) October Revolution of Russia, (xi) Treaty of Versailles, (x) Conquest of Mount Everest by Hillary and Tenzing. (N.D.A. May '67).

Ans. (i) 1492, (ii) 1498, (iii) 1588, (iv) 1945, (v) 1919, (vi) 1885, (vii) 1688, (viii) 1917, (ix) 1919. (x) 1953.

Q. 8. Give the dates of the following :—

(i) Alexander's invasion of India, (ii) Beginning of the Hijri era, (iii) Third Battle of Panipat, (iv) Japan's attack on Pearl Harbour, (v) Quit India Movement. (V.D.A. Dec. '66)

Ans. (i) 327-326 B.C., (ii) 632 A.D., (iii) 1761 (iv) 1941 (v) 1942.

Q. 9. Give the years of the following events :—

(i) Beginning of the Vikrami era, (ii) Taimur's invasion of India, (iii) Second Battle of Panipat, (iv) First War of Indian Independence against the British, (v) Signing of Magna Carta, (vi) Columbus' discovery of America, (vii) The Spanish Armada, (viii) End of the first World War, (ix) Man's first entry into outer space, (x) Assassination of President Kennedy. (N.D.A. May '66)

Ans. (i) 58 B.C., (ii) 1398 A.D., (iii) 1556, (iv) 1857, (v) 1215. (vi) 1492, (vii) 1588, (viii) 1938, (ix) 1961, (x) 1963.

Q. 10. State the important events in India associated with the following years :—

(i) 261 B.C., (ii) 1526 A.D., (iii) 1757, (iv) 1857, (v) 1947. (Income-tax Inspectors' 1966)

Ans. (i) Conquest of Kalinga, (ii) First Battle of Panipat, (iii) Battle of Plassey, (iv) First War of Indian Independence, (v) Partition of India ; India achieves independence ; creation of Pakistan.

Q. 11. Why are the following dates famous in world history ?

(i) 1789 A. D., (ii) 1837 A. D., (iii) 1878 A. D., (iv) 1914 A.D. (Indian Navy Dec. '66)

Ans. (i) French Revolution, (ii) Queen Victoria succeedes to the throne, (iii) Cyprus ceded to Britain, (iv) World War I declared on July 28, 1914.

Q. 12. Mention the exact dates and years of the following events:—

(i) Russia launched the world's first space satellite, (ii) Versailles Treaty was signed, (iii) First conquest of Mount Everest, (iv) Communist China launched a major ofiensive against India, (v) Defeat of Napoleon at Waterloo, (vi) Death of Mahatma Gandhi. (I.M.A. June' 66)

Ans. (i) Oct, 4, 1957, (ii) June 28, 1919, (iii) May 29, 1953, (iv) Oct. 20, 1962, (v) June 18, 1815, (vi) January 30, 1948.

Q. 13. What is the importance of the following dates in Indian history ?

(i) 606 A. D., (ii) 711, (iii) 1605, (iv) 1909.

(Indian Navy July' 66)

Ans. (i) Accession of Harshavardhana, (ii) Arab invasion of Sind by Mohd.-bin-Kasim, (iii) Death of Akbar and accession of Jehangir, (iv) Indian Council Act or Morley-Minto Reforms Bill passed.

Q. 14. Why are the following dates famous in world history?

(i) 1492 A. D., (ii) 1776. (iii) 1815, (iv) 1919.

(indian Navy July' 66)

Ans. (i) Columbus sailed for the new world on his first voyage and discovered America, (ii) Declaration of American Independance, (iii) Battle of Waterloo, (iv) Treaty of Versailles.

Q. 15. Give the years of the following events :—

(i) Spanish Armada was defeated, (ii) Death of Lenin, (iii) Suez Canal Dispute, (iv) Peary reached the North Pole, (v) Sepoy Mutiny, (vi) Actual year of the birth of Christ (vii) Death of Buddha, (vii)) First Olympic Games held in Greece, (ix) The Magna Carta was signed by King John, (x) Subhash Chandra Bose escaped from India, (xi) Birth of Shakespeare, (xii) Vasco da Gama discovered the sea-route to India. (I.M.A. June' 66)

Ans. (i) 1588, (ii) 1924, (iii) 1956, (iv) 1909, (v) 1857, (vi) 4 B. C., (vii) 527 B. C., (viii)776 B. C., (ix) 1215, (x) 1943, (xi) 1564, (xii) 1498.

BOOKS AND AUTHORS

Q. 1. Name the authors of the following books :—

(a) Arthashastra, (b) Akbar-Nama, (c) Kadambari, (d) Meghduta, (e) Raj Tarangana, (f) Glimpses of World History, (g) India Wins Freedom, (h) Anna Karenina, (i) Ben Hur and (j) Mother India. (Clerk's Grade June '67)

Ans. (a) Kautilya, (b) Abul Fazl, (c) Bana Bhatt, (d) Kalidas, (e) Kalhana, (f) Jawahar Lal Nehru, (g) Maulana Abul Kalam Azad, (h) Leo Tolstoy, (i) Lewis Wallace, (j) Katherine Mayo.

Q. 2. Name the authors of the following :—

(i) Kama Sutra, (ii) Don Quixote, (iii) The Razor's Edge, (iv) Animal Farm, (v) The Coolie. (Stenos June '67)

Ans. (i) Vatsyana, (ii) Cervantes, (iii) Somerset Maugham (iv) George Orwell, (v) Mulkh Raj Anand.

Q. 3. Who wrote the following :—

(i) Ramcharit Manas, (ii) Hindu View of Life, (iii) Godan, (iv) The Good Earth, (v) Discovery of India, (vi) Mother, (vii) War and Peace, (viii) Three Musketeers, (ix) Mein Kampf and (x) Geet Govind. (N. D. A. May '67)

Ans. (i) Tulsi Dass, (ii) Dr. S. Radhakrishnan, (iii) Prem Chand, (iv) Pearl Buck, (v) Jawahar Lal Nehru, (vi) Maxim Gorky, (vii) Leo Tolstoy, (viii) Alexander Dumas, (ix) Adolf Hitler, (x) Jaya Dev.

Q. 4. Name the authors of the following books :—

(i) Alice in Wonderland, (ii) Raghuvamsha, (iii) Rubaiyat, (iv) Essays of Elia, (v) Ivanhoe and (vi) The Untold Story. (S. C. R. A. June '67)

Ans. (i) Lewis Carrol, (ii) Kalidas, (iii) Edward Fitzgerald (iv) Charles Lamb, (v) Walter Scott, (vi) B. M. Kaul.

Q. 5. Mention the names of the authors of the following books :—

(i) The Three Musketeers, (ii) And Quiet Flows the Don, (iii) Robinson Crusoe, (iv) Arms and the Man, (v) Godan,

(vi) Round the World in Eighty Days, (vii) Uttar Ram Charita, (viii) The Social Contract, (ix) The Divine Comedy, (x) The Bishop's Candle-sticks, (xi) Oliver Twist, (xii) Kadambari, (xii) Gone with the Wind and (xiv) Vinaypatrika.

(I. M. A. May '67)

Ans. (i) Alexander Dumas, (ii) Mikhail Sholokhev, (iii) Daniel Defoe, (iv) George Bernard Shaw, (v) Prem Chand, (vi) Jules Verne, (vii) Bhava Bhuti, (viii) Rousseau, (ix) Dante, (x) It is an adaptation, from the famous novel 'Les Miserable' by Victor Hugo, (xi) Charles Dickens, (xii) Bana Bhatt, (xiii) Margaret Mitchel, (xiv) Tulsi Das.

Q. 6. Mention the names of authors of any twelve of the following :—

(i) Odakkuzhal, (ii) The Count of Monte Cristo, (iii) Ivanhoe, (iv) The Rains Came, (v) Geeta Govinda, (vi) Tyagpatra, (vii) Akbarnama, (viii) Plague, (ix) Bhowani Junction, (x) Brave New World Revisited, (xi) Agni Veena, (xii) The Prince, (xiii) Vevipadagulu, (xiv) Mankutlmmanakagga.

(I. M. A. June '66)

Ans. (i) G. Sankar Kurup [*Malayalam*], (ii) Alexander Dumas, (iii) Walter Scott, (iv) Louis Bromfield, (v) Jaya Deva, (vi) Jenendra, (vii) Abul Fazal, (viii) Albert Camus, (ix) John Master, (x) Aldous Huxley, (xi) Kazi Nasrul Islam, (xii) Machievelli, (xiii) Viswanath Satyanareyan (*in Telugu*) (xiv) D. V. Gundappa.

Q. 7. Name the authors of the following books :—

(i) Meghaduta, (ii) Babur-nama, (iii) Gitanjali, (vi) Discovery of India, (v) Twelfth Night, (vi) Shah-rama, (vii) Anna Karenina, (iii) For Whom the Bell Tolls.

(Indian Navy Dec '66)

Ans. (i) Kalidas, (ii) Abdul Rahim Khan-i-khana, (iii) Rabindra Nath Tagore, (iv) Jawahar Lal Nehru, (v) Shakespeare, (vi) Firdausi, (vii) Leo Tolstoy, (viii) Ernest Hemingway.

Q. 8. Who wrote the following :—

(i) Meghadoot, (ii) Shahnama, (iii) The Story of My Experiments with Truth, (iv) Robinson Crusoe, (v) Das Kapital.

Ans. (i) Kalidas, (ii) Firdausi (iii) Mahatma Gandhi, (iv) Daniel Defoe, (v) Karl Marx.

Q. 9. Mention the names of the authors of the following :—

(i) Hungry Stones (ii) Candida, (iii) Pygmalion.

(I. T. O. Dec. '66)

Ans. (i) Rabindra Nath Tagore (ii) George Bernard Shaw (iii) George Bernard Shaw.

Q, 10. Names the authors of the following books :—

(i) Good Earth, (ii) Das Kapital, (iii) War and Peace, (iv) Pilgrim's Progress, (v) The Old man and the Sea.

(Income-tax Inspectors 1966)

Ans. (i) Pearl Buck, (ii) Karl Marx,, (iii) Tolstoy, (iv) John Bunyan, (v) Ernest Hemingway.

Q. 11. Name the authors of the following books and the language in which these were originally written :—

(i) Ramcharit Manas, (ii) Illiad, (iii) Arthashastra, (iv) Don Quixote, (v) Divine Comedy· (Stenos 1966)

Ans. (i) Tulsi Das (Hindi—Avadhi), (ii) Homer (Greek), (iii) Kautilya (Sanskrit), (iv) Cervantes (Spanish), (v) Dante (Italian).

Q. 12. Name the authors of the following books :—

(i) Ramayana, (ii) Harshacharita, (iii) The Odyssey, (iv) The Origin of Species, (v) The Adventures of Sherlock Holmes.

(S. C. R. A. 1966)

Ans, Valmiki, (ii) Bana Bhatt, (iii) Homer, (iv) Charles Darwin, (v) Arthur Conan Doyle.

Q. 13. Name the author of the following :—

(i) Mahabharat, (ii) Arthashastra, (iii) Akbar-nama, (iv) Rama-Charita-Munas, (v) Gitanjali, (vi) The Hindu View of Life, (vii) Hamlet, (viii) Oliver Twist, (ix) Mother, (x) Anna Karenina. (N. D. A. May '66.)

Ans. (i) Ved Vyas, (ii) Kautilya, (iii) Abul Fazal, (iv) Tulsi Dass, (v) Rabindra Nath Tagore. (vi) S. Radhakrishnan, (vii) Shakespeare (viii) Charles Dickens, (ix) Maxim Gorky, (x) Tolstoy.

Q. 14. State the names of the authors of each of the following lines :—

(i) Better to reign in hell than serve in heaven.

(ii) A thing of beauty is a joy for ever.

(iii) East is East and West is West and never the twain shall meet.

(iv) Frailty, thy name is woman.

(v) More things are wrought by prayer than this world dreams of. (Income tax Inspectors 1966)

Ans. (i) Milton, (ii) John Keats, (iii) Kipling, (iv) Shakespeare, (v) Tennyson.

Q. 15. Give the names of the books and their authors in which the following Characters occur :—

(i) Hector ; (ii) Shakuntala ; (iii) Sancho Panza ; (iv) Shylock. (Indian Navy Dec. '64)

Ans. (i) In "Illiad" by homer (ii) In "Shakuntala" by Kalidass (iii) In "Don Quixote" by Cervantes (iv) In "Merchant of Venice" by Shakespeare.

Q. 16. Give the names of authors of the following :—

(i) Paradise Lost (ii) The Good Earth (iii) Meghdoot (iv) Hamlet (v) Saket (vi) Ramayana (vii) Robinson Crusoe (viii) Oliver Twist (ix) Round the world in Eighty Days (x) Uttar Ram Charita (xi) Faust (xii) The Scarlet Pimpernel. (N. D. A. Dec. '64)

Ans. (i) John Milton (ii) Pearl Buck (iii) Kalidas (iv) Shakespeare (v) Maithili Saran Gupta (vi) Valmiki (vii) Daniel Defoe (viii) Charles Dickens (ix) Jules Verne (x) Bhawa Bhuti (xi)Goethe (xii) Baroness Orczy.

Q. 17. Who wrote the following :—

(i) Autobiography of an Unknown Indian (ii) One World (iii) Origin of Species (iv) The Invisible Man (v) Kim. (I. R. S. E. 1964)

Ans. (i) Nirad C. Chaudhury (ii) Wendell Wilkie (iii) Darwin (iv) H. G. Wells (v) Rudyard Kipling.

INDIAN DEFENCE

Q. 1. What are these ? —

(i) I.N. S. Mysore ; (ii) I.N.S. Vikrant ; (iii) I.N.S. Circars ; (iv) I. N. S. Venduruthy ; (v) I. N. S. Dufferin. *(Write about 20 words on each.)* (I.N. Dec. '64)

Ans. (i) a Colony class cruiser ; (ii) Flag-ship—the first Indian Aircraft Carrier ; (iii) Indian Naval Training Ship at Visakhapatnam, meant for imparting training to new recruits coming into the Navy ; (iv) Premier Naval Training establishment Cochin ; (v) Merchant Naval Training Ship at Bombay.

Q. 2. Answer the following questions :—

(i) What is the designation of the head of each of the Defence Services ? (ii) Where is the laboratory of the Defence Science organization situated ? (iii) Where are the engineering officers of the Technical Branches of the I.A.F. trained ? (iv) Name, in order, three lowest commissioned ranks in the I.A.F., starting with the highest. (v) Name the Indian Navy's first air station.

(Flying College Nov. '59).

Ans. (i) Chief of the Army Staff ; Chief of the Air Staff and Chief of the Naval Staff, (il) Kirkee (Poona) (iii) Jalahalli (iv) Flight/Lieutenant ; Flying Officer, (v) 'Garuda' at Gochin.

Q. 3. Mention in,asdending or descending order the Ranks in the Indian Army, Navy and Air Force. (N.D.A. Dec. '64).

Q. 4. Name the location of each of the three Air Force Colleges of India. (Flying College Nov. '58.)

Ans. (i) Air Force Flying College, Jodhpur (ii) Air Force School, Tambaram (ii) Air Force School, Jalahalli (Bangalore).

Q. 5. Give any three successive ranks in the Army.

(N.D.A. June '58.)

Ans. (i) Field Marshal ; (ii) General ; (iii) Lt. General.

Q. 6. Name the types of aircraft which are being manufactured or assembled by the Hindustan Aeronautics Ltd ? Where are its main production/assembly units located ?

(I.T.O. Dec. '66.)

Ans. The following types of aircraft are being manufactured or assembled by the Hindustan Aeronautics Ltd. The Hindustan Aeronautics has taken under its wings the Hindustan Aircraft Ltd., Banglore and the Aircraft Manufacturing Depot, Kanpur which had been working independently) :—

(1) MIG aircraft are being assembled at three factories : (i) Nasik (Aeroframe), (ii) Koraput (Engine) and (iii) Hyderabad (Electronics).

(2) Gnat fighters by HAL at Bangalore.

(3) Marut (Mark 1), supersonics jet fighter (at HAL).

(4) Kiran, jet trainer aircraft (at HAL).

(5) HF–2, Trainer aircraft.

(6) HF–24, supersonic jet Fighter.

(7) Avro–748, feeder-line aircraft (at Kanpur).

(8) Pushpak, an ultra-light aircraft (at HAL).

EVERYDAY SCIENCE

Q. 1. Complete the following sentences using any of the words given against eaeh :—

(i) Lunar eclipse occurs—on a full moon day.
(Always ; Never)

(ii) A——converts mechanical energy into electrical energy.
(Dynamo ; Motor)

(iii) It is more—to swim in a lake than in the sea.
(easy; difficult)

(iv) ——is a mixture of nitrogen and oxygen.
(air ; water)

(v) Sound travels——through solids than in the eir.
(faster ; slower)

(vi) Water——on solidification. (contracts ; expands)

(vii) Gases are——conductors of heat. (good ; poor)

(viii) Water boils at——temperature in mountains than at sea level. (higher ; lower)

(Engg. Supervisors' Exam. 1966)

Ans. (i) always ; (ii) dynamo ; (iii) difficult ; (iv) air ; (v) slower ; (vi) expands ; (vii) good ; (viii) higher.

Q. 2. Complete the following sentences by filling each blank with an appropriate word :—

(l) A knot is a measure of——.

(ii) The substance present in red corpuscles, which gives blood its red colour, is called——.

(U.P.S.C. Clerks' Grade June '67)

Ans. (i) speed of the ship ; (ii) Haemoglobin.

Q. 3. Fill up each of the blanks in the following with an appropriate word or name from the list given :—

(i) ——discovered the structure of the atom,

(ii) The explanation of fission was first suggested by—.

(iii) The theory of evolution was propounded by——.

(iv) The Periodic Table was prepared by——.

(v) The first telescope was constructed by——.

(vi) A chrysanthemum is a——.

(vii) The giraffe has a long——.

(viii) An asteroid is a small——.

(ix) A canary is a——.

(x) The rhinoceros has a——.

(Darwin, Rutherford, planet, Galileo, flower, Meitner and Frisch, neck, Mendeleef, bird, horn).

Ans. (i) Rutherford ; (ii) Meitner and Frisch ; (iii) Darwin ; (iv) Mendeleef ; (v) Galileo ; (vi) flower ; (vii) neck ; (viii) planet ; (ix) bird ; (x) horn.

Q. 4. Complete the following statements :—

(i) A chronometer measures——.

(ii) A sextant measures——.

(iii) An altimeter measures——.

(iv) A pipette measures——.
(v) A hygrometer measures——.
(vi) An ammeter measures——.

(I.M.A. Nov. '65)

Ans. (i) time accurately ; (ii) angular elevation of the Sun and Stars ; (iii) heights with the help of atmospheric pressure ; (an apparatus used in aircraft for measuring altitudes ; (iv) volume of a liquid ; (v) humidity in air ; (vi) the strength of electric current.

Q. 5. Fill the blanks with appropriate words :—

(i) ——is used to fill electric bulbs.
(ii) ——is used to protect electric circuits.
(iii) ——is used to sweeten the soil.
(iv) ——is used to kill bacteria in water.
(v) ——is used to extinguish fire.

(Indian Navy Dec. '64)

Ans. (i) Nitrogen ; (ii) Fuse ; (iii) Gypsum ; (iv) Clorine or potassium permanganate ; (v) carbon dioxide;

Q. Fill the blanks with suitable words given below :—

(i) ——is a cereal ;
(ii) ——is a pulse ;
(iii) ——is an oilseed ;
(iv) ——is a tuber ;
(v) ——is a condiment.

(cardamom, onion, peanut, pea, rice) *(I.N- Dec. '64)*

Ans. (i) rice ; (ii) pea ; (iii) peanut ; (iv) onion ; (v) cardamom.

Q. 6. Complete the following statements by filling in the blanks :—

(i) The rate of change of velocity is——.
(ii) The product of mass and velocity is——.
(iii) The instrument used to measure atmospheric pressure is called a——.
(iv) Diamond and graphite are——forms of carbon.
(v) A——is the material added to the soil to promote the growth of plants.

(N.D.A. Dec. '64)

Ans. (i) acceleration ; momentum ; (iii) barometer ; (iv) crystalline ; (v) fertilizer.

Q. 7. Fill in the gaps, each by a word, in the following statements :—

(i) A man bends—while going up a hill.

(ii) A—thermometer has a construction just above its bulb.

(iii) It is—to swim in the ocean than in a lake.

(iv) When an ebonite rod is robbed with fur, equal and—charges result.

(v) The weight of an object is slightly—at the poles than at the equator.

Ans. (i) forwards (ii) clinical (iii) easier (iv) opposite (v) greater.

Q. 8. Complete the following statements by filling in the blanks :—

(i) Burning of sulphur is a......change.

(ii) Copper is a good......of heat and electricity.

(iii) Graphite is an allotropic form of......

(iv) Iodine......on heating.

(v) ......is formed when hydrochloric acid is neutralized with sodium hydroxide.

(vi) Anopheles mosquito causes......fever.

(vii) Pea is a......bearing plant.

(viii) ......gas is prepared by the action of dilute sulphuric acid on zinc.

(ix) Like poles of two magnets......each other.

(x) Scurvy is a......disease.

(xi) The great......desert is in Africa.

(xii) Days and nights are of equal duration throughout the year at the......

(xiii) Smallpox is a......disease.

(xiv) The latitude of North Pole is......north.

(xv) ......is manufactured by the hydrogenation of coal.

Ans. (i) Chemical (ii) Conductor (iii) Carbon (iv) Sublimates (v) Sodium Chloride (vi) Malaria (vii) Pod (viii) Hydrogen (ix) Repel (x) Deficiency (xi) Sahara (xii) Equator (xiii) Virus (xiv) 90 (xv) Acetylene.

Q. 9. Complete the following statements by filling in the blanks :—

(i) Rusting of iron is a......change.

(ii) Aerated water contains......gas.

(iii) ......gas is used in the manufacture of vegetable ghee.

(iv) Madame Curie discovered......

(v) ......gets enlarged when a person suffers from malaria.

(vi) Deficiency of Vitamin C in the body causes......

(vii) ......gas is administered to patients suffering from pneumonia.

(viii) Dissolving of sugar in water is a......change.

(ix) An acid reacts with a base to form......and water.

(x) Etna is the name of a......in Sicily.

(xi) The reindeer is a useful animal in the...region.

(xii) Mount......is the highest mountain in the world.

(xiii) The......meridian passes through the Royal Observatory at Greenwich.

(xiv) A sea breeze blows from the sea to the......during the day.

(xv) A straight rod partly immersed in water appears bent because of—of light. (N.D.A. May '65)

Ans. (i) chemical. (ii) carbon dioxide. (iii) hydrogen. (iv) radium. (v) spleen. (vi) scurvy. (vii) Oxygen. (viii) physical. (ix) salt. (x) volcano. (xi) Tundras. (xii) Everest. (xiii) Prime. (xiv) land. (xv) refraction.

Q. 10. Fill in the gaps, each by a word or group of words in the following statements :—

(a) Oxygen is a—of combustion.

(b) Lime water placed in air turns milky due to the presence of—in air.

(c) Iron sheets coated with a layer of zinc are known as—iron.

Ans. (a) Supporter (b) Carbon dioxide (c) Galvanised.

INVENTIONS AND DISCOVERIES

Q. 1. Who invented or discovered the following ?—

(i) Development of hybrid corn, (ii) Oxygen, (iii) Aniline dyes, (iv) Wireless Telegraphy, (v) Motion pictures.
(Stenos June' 67)

Ans. (i) George Mendel, (ii) J. Priestley, (iii) Hoffmann, (iv) Marconi, (v) Thomas Edison.

Q. 2. With what important discoveries/inventions are the following associated ?—

(i) Alexander Fleming, (ii) J. Baird, (iii) Madame Curie, (iv) Ronold Ross, (v) Selman Waksman and (vi) U. N. Brahmachari. (Clerk's Grade June' 67)

Ans. (i) Penicillian, (ii) Television, (iii) Radium, (iv) Malaria Parasite, (v) Streptomycin, (vi) Cure of kala-a.zar fever.

Q. 3. Who discovered or invented the following ?—

(i) Radium, (ii) the theory of evolution, (iii) penicillin, (iv) Wireless, (v) the steam engine and (vi) the malaria parasite. (N. D. A. ay' 67)

Ans. (i) Madame Curie, (ii) Charles Darwin, (iii) Alexander Fleming, (iv) Marconi, (v) James Watt, (vi) Dr. Ronald Ross.

Q. 4. Give one contribution to science made by each of the scientists listed in Group A, selecting your answer from Group B :—

GROUP A

(i) James Dewar, (ii) Christian Huygens, (iii) Alexander Fleming, (iv) James Clerk Maxwell, (v) Wilhelm Konard Roentgen.

GROUP B

Quantum theory; discovery of radioactivity; wave-theory of light; discovery of X-rays; invention of the thermos flask; laws of planetary motion ; discovery of insulin ; discovery of the rare gases ; discovery of penicillin ; theory of electromagnatic waves. (I. M. A. June' 66)

Ans. (i) James Dewar ...Thermos flask
(ii) Christian Huygens ...Wave theory of light
(iii) Alexander Fleming ...Penicillin
(iv) James Clerk Maxwell ...Theory of electro-magnetic waves
(v) Wilhelm Konard Roentgen ...X-rays

Q. What discoveries are associated with the following names ?—

(i) Urey, (ii) Mendeleef, (iii) Torricelli, (iv) Mendel and (v) Bacquerel. (S. C. R. A. June' 66)

Ans. (i) Heavy Hydrogen, (ii) Periodic Table, (iii) Barometer, (iv) Laws of Heredity, (v) Radio-activity of Uranium.

Q. Why are the following famous ?—

(i) Amundsen, (ii) Lister, (iii) Linnaeus, (iv) Max Planck and (v) George Stephenson. (*About 3 lines each*).
(Indian Navy July'66)

Ans. (i) **Amnndsen** : He was Norwegian explorer who discovered the South Pole in 1912. In 1926 he flew over the pole from Spitzbergen to Telfer in Alaska.

(ii) **Lister** : English surgeon who introduced the antiseptic system which revolutionized modern surgery. He also made important observations on the cougulation of the blood, inflammation etc.

(iii) **Linnacus** . He was a Swedish botanist. He founded the modern botany. He expounded his system of classification, based on sexual characteristics.

(v) **Max Planck** : He was a German theoretical physicist who formulated the quantum theory which revolutionized physics, He was awarded the Nobel Prize in 1918.

(v) **George Stephenson** : He was British inventor of the locomotive. He was son of a colliery engine-keeper.

Q. 5. Mention *one* important contribution to science made by each of the following :—

(i) Nicolas Copernicus, (ii) Edward Jenner, (iii) Johann Gregor Mendel, (iv) Niels Bohr and (v) Heinrich Hertz.
(I. M. A. Nov. '65)

Ans. (i) Discovered Solar System in 1540; (ii) Vaccination; (iii) Laws of Heredity; (iv) Electron theory—Atomic Structure (v) Electrical Waves.

Q. 6. With what discoveries or inventions do you associate the following ?—

(i) Einstein, (ii) Madame Curie, (iii) James Watt, (iv) Newton, (v) Davy.

Ans. (i) Theory of Relativity (ii) Discovery of radium, (iii) Steam Engine, (iv) Laws of gravitation, (v) Miner's Safety Lamp.

Q. 7. Answer the following :—

(i) Who invented the miner's safety lamp ? (ii) Who made radio communication a practical proposition ? (iii) Who invented the steam engine ? (iv) What type of heavenly body is the earth ? (v) What instrument is used for recording earth tremors ? [N. D. A. Dec. '65]

Ans. (i) Davy, (ii) Marconi, (iii) James Watt, (iv) Planet, (v) Seismograph.

Q. 8. With what discoveries or inventions do you associate the following ?—

(i) Alexander Fleming, (ii) Harvey, (iii) J. Baird, (iv) Ronald Ross, (v) H. C. Urey. [N. D. A. Dec. '65]

Ans. (i) Penicillin, (ii) Circulation of blood, (iii) Television (iv) Malaria Parasite, (v) Discovery of heavy Water.

Q. 9. State the achievements of the following :—

(i) Rutherford, (ii) Austin, (iii) Madame Curie, (iv) Lister, (v) Columbus. [Indian Navy Dec. '65]

Ans. (i) Succeeded in splitting the atom for the first time in 1918, (ii) Invention of Motor Car, (iii) Discovery of Radium (iv) Antiseptic treatment, (v) Discovered West Indies in 1492 and South America in 1498.

Q. 10. With what important inventions or discoveries are the following associated ? Which country did they belong to ?—

(i) Alfred Nobel, (ii) Joseph Priestley, (iii) Alexander Graham Bell, (iv) Rudolf Diesel. [Indian Navy Dec. '64]

Ans. (i) Dynamite, (ii) Oxygen, (iii) Telephone, (iv) Internal Combustion Engine (Diesle Engine).

Q. 11. Who invented the following ?—

(i) Dynamite, (ii) Electric Lamp, (iii) Steam Engine, (iv) Television, (v) Air-Brake.

[P. & T. Engg. Supervisor's 1965]

Ans. (i) Alfred Nobel, (ii) Edison, (iii) James Watt, (iv) J. L. Baird, (v) George Westinghouse.

Q. 12. What do you associate with the following names ?—

(i) Amundsen, (ii) Fermi, (iii) Montessori, (iv) Morse, (v) Raman.

[P. C. S. 1964]

Ans. (i) Discovered South Pole in 1912, (ii) He propounded uranium fission theory—artificial splitting of atoms, (iii) She propounded educational system of training children, (iv) He invented Electric Telegraph in 1832, (v) Raman Effect.

Q. 13. With what are the following names associated ?

(i) Mendel, (ii) Lister, (iii) Darwin, (vi) Raman (v) Galileo.

[I. R. S. E. 1964]

Ans. (i) Law of heredity, (ii) Antiseptic treatment, (iii) Theory of evolution, (vi) The Raman effect in diffusion of light, (v) Telescope.

Q. 14. Fill the blanks with suitable name ; :—

(i) ....discovered America, (ii) ....discovered Australia, (iii) ....reached the South Pole first, (iv) ....is the first cosmonaut, (v) ....is the first dog to go into space.

[I. N. Dec. '64]

Ans. (i) Columbus, (ii) Cook, (iii) Edmund Hillary, (iv) Yuri Gagarin, (v) Laika.

Q. 15. What are the following eminent scientist famous for ?—

(i) Sir Alexander Fleming ; (ii) Sir Issac Newton , (iii) Madame Curie ; (iv) Konard Roentgen ; (v) C. V. Raman.

Ans. (i) Discovered pencillin in 1922; (ii) law of gravitation; (iii) discovery of radium; (iv) discovery of X-rays; (v) discovery of "Raman Effect" which concerns the changes in frequency that occur when monochromatic light is scattered by a transparent medium.

NATIONAL LABORATORIES, SCIENTIFIC RESEARCH INSTITUTES AND INDUSTRIAL UNDERTAKINGS ETC.

Q. 1. (a) **Name three places where the government has started its own oil refineries.**

(b) **Where are the following located ?—**

(i) Central Mechanized Farm, (ii) Heavy Electricals (new Unit), (iii) National Defence Academy.

(S. C. R. A. June'67)

Ans. (a) Barauni (Bihar), Nunamati (Gauhati, Assam), Koyali (Gujrat).

(b) (i) Suratgarh, (ii) Ranipur (Hardwar), (iii) Khadakvasla near Poona.

Q. 2. Mention the place in India where the following are located :—

(i) Indian Agricultural Research Institute, (ii) Haffkine Institute, (iii) Central Mechanical Engineering Institute, (iv) Central Building Research Institute, (v) Petroleum Research Institute. (Assts. Grade Feb.'67)

Ans. (i) New Delhi, (ii) Bombay, (iii) Durgapur, (iv) Roorkee, (v) Dehra Dun.

Q. 3. Name two places in India where the following are located :—

(i) Antibiotics factories, (ii) Heavy Electricals' (iii) Atomic power stations, (iv) Oil refineries, (v) Fertilizer factories. (Stenos' June'67)

Ans. (i) Pimpri (Poona) ; Rishikesh near Hardwar. (ii) Bhopal (Madhya Pradesh); Ranipur (Hardwar). (iii) Tarapore near Bombay (Maharashtra); Rana Pratap Sagar (Rajasthan). (iv) Barauni (Bihar); Nunamati (Gauhati, Assam). (v) Sindri (Bihar) ; Nangal (Punjab).

Q, 4. Name the towns where the following are situated :—

(i) National Physical Labortory, (ii) National chemical Laboratory, (iii) National Aeronautical Laboratory, (iv) Forest Research Institute, (v) Central Leather Research Institute, (vi) Central Drug Research Institute.

(Clerks' Grade June' 67)

Ans. (i) New Delhi, (ii) Poona, (iii) Bangalore (iv) Dehra Dun, (v) Madras, (vi) Lucknow.

Q. 5. Where are the following situated ?—

(i) Central Food Research Institute, (ii) Heavy Electrical Factory, (iii) Hindustan Teleprinters Factory, (iv) National Defence Academy. (v) Integral Coach Factory, (vi) Heavy Engineering Corporation, (vii) National Chemical Laboratory, (viii) National Metallurgical Laboratory.

(P. & T. Engg. Supervisors' Exam. 1966)

Ans. (i) Mysore, (ii) Bhopal and Hyderabad, (iii) Madras, (iv) Khadakvasla, (v) Perambur (Madras), (vi) Ranchi. (vii) Poona, (viii) Jamshedpur.

Q. 6. Where are the foilowing situated ?

(i) National Physical Laboratoy, (ii) National Chemical Laboratory, (iii) Indian School of Mines, (iv) Forest Research Institute, (v) Central leather Research Institute, (vi) Hindustan Antibiotics Ltd.

(N. D. A. May' 66)

Ans. (i) New Delhi, (ii) Poona, iii) Dhanbad, (iv) Dehra Dun, (v) Madras, (vi) Pimpri (Poona).

Q. 7. Name three places in India where railway locomotives are manu factured.

(S. C. R. A. June' 67)

Ans. (1) Chittaranjan (West Bengal), (2) Tata Engineering and Locomotive Works' Jamshedpur (3) Diesel Locomotive Works' Varanasi.

THE FIRSTS AND THE LASTS

Q. 1. Name the following :—

(i) The first Indian to join the I.C.S. (ii) The first Asian woman to swim the English Channel. (iii) The first President of the U.S.A. to come to India. (iv) The first space rocket to hit the moon. (v) The first Soviet Prime Minister to visit the U.S.A. (Flying College April '61)

Ans. (i) Satyendranath Tagore, (ii) Arati Saha (*now Mrs. Arati Gupta*). (iii) General D, Eisenhower. (iv) Lunik II. (v) N. Khrushchev.

Q. 2. Name the following :—

(i) The first Catholic to become President of the U.S.A. (ii) The first country to send a space rocket with success to moon. (iii) The first Indian to join the I.C.S. (iv) The first woman President of the U,N. General Assembly. (v) The last Governor-General of India. (S.C.R.A. 1964)

Ans. (i) John F. Kennedy (ii) Russia (iii) Satyendranath Tagore (iv) Shrimati Vijayalakshmi Pandit (v) Lord Canning.

Q. 3. Answer the following:—

(i) Name the first Indian scientist who got the Nobel Prize. (ii) Who was the first President of the U.S.A. ? (iii) Who was the first President of the Indian National Congress? (iv) On what river does Srinagar stand ? (v) What is the highest Indian military decoration ? (vi) Who invented the telephone ? (N. D.A. Dec. '66)

Ans. (i) Dr. C.V. Raman (ii) George Washington (iii) W. C. Bonnerji (iv) Jhelum (v) Param Vir Chakra (vi) Graham Bell.

Q. 4. Name the first Indian lady to become :

(i) The President of the General Assembly of the U.N.O., (ii) the Chief Minister of a State in the Indian Union ; (iii) the Speaker of a State Assembly in India ; (iv) The Governor of a State in India ; (v) Miss World. (Stenos June '67)

Ans. (i) Mrs. Vijaylaxmi Pandit, (ii) Mrs. Sucheta Kripalani, (iii) Shrimati Shanno Devi, (iv) Sarojini Naidu, (v) Reita Faria.

Abbreviated or Alternative Names of well-known Persons

Q. 1. Who or what are/were popularly known by the following names :—

(i) Gurudev. (ii) The Fuehrer. (iii) Netaji. (iv) Lokmanya. (v) Bapu. (vi) Frontier Gandhi. (vii) Maid of Orieans. (viii) G.B.S. (ix) Land of the Five Rivers. (x) Land of the Rising Sun. (N.D.A. Dec '66)

Ans. (i) Rabindra Nath Tagore. (ii) Herr Hitler (iii) Subhash Chander Bose. (iv) Bal Gangadhar Tilak. (v) Mahatm Gandhi. (vi) Abdul Ghaffar Khan. (vii) Joan of Arc (viii) George Bernard Shaw. (ix) Punjab. (x) Japan.

Association of Places

Q. 2. Name the most famous person associated with the following places :—

(a) Belur, (b) Sabarmati, (c) Santivana, (d) Fatehpur Sikri, (e) Vrindaban (U.P.), (f) Seringapattam, (g) Mecca, (h) Talwandi, (i) Santi Niketan, (j) Chittore, (k) Jerusalem, (l) Ujjain. (UPSC Clerks' June '66)

Ans. (a) Rama Krishna Paramhans, (b) Mahatma Gandhi, (c) Jawahar Lal Nehru, (d) Akbar, the Great, (e) Lord Krishna, (f) Tipu Sultan, [g) Mohammad, the Prophet, (h) Guru Nanak, (i) Rabindra Nath Tagore, (j) Rana Pratap, (k) Lord Christ, (l) Mahavira.

Q. 3. Who are known as the following :—

(i) The Enlightened one ; (ii) The Iron Duke ; (iii) The Fuehrer ; (iv) The Lion of the Punjab ; (v) The Strong man of India ; (vi) The Nightingale of India ; (vii) Lokmanya ; (viii) Shastriji ; (ix) Gurudev ; (x) Netaji ; (xi) Deshbandhu ; (xii) C.R. (N.D.A. May '65)

Ans. (i) Buddha ; (ii) Duke of Wellington ; (iii) Hitler ; (iv) Lala Lajpat Rai ; (v) Sardar Patel ; (vi) Sarojini Naidu ; (vii) Bal Gangadhar Tilak ; (viii) Lal Bahadur Shastri ; (ix) Rabindra Nath Tagore ; (x) Subhash Chandra Bose ; (xi) C.R. Das ; (xii) C. Rajgopalachari.

Trade Names

Q. 4. With what are the following names associated ?—

(i) Red and White, (ii) Shalimar, (iii) Kassel, ((v) Remington, (v) Zeal and (vi) Murphy. (I.M.A. May '67)

Ans. (i) Cigarette, [ii) Paints, (iii) Fans, (iv) Typewriter, (v) Thermometer. (vi) Radio, Ironing press.

Q. 5. With what trades or articles do you associate the following names ? Answer any five.

(i) Fiat, (ii) Flit, (iii) Forhans, (iv) Saridon, (v) Cherry Blossom, (vi) Surf, (vii) Eveready, (viii) Parker. (P. & T. Engg. Supervisors '66)

Ans. (i) Motor Car, (ii) Insectiside, (iii) Tooth Paste, (iv) Medicine for curing headache etc., (v) Boot-polish, (vi) Washing soap powder' (vii) Battery (Torch),, (viii) Fountain-pen.

Q. 6. With what articles are the following specially associated ?—

(i) Eveready, (ii) Landmaster, (iii) Hamam, (iv) Lambretta, (v) Glaxo, (vi) Lalimli, (vii) Singer, (viii) Hercules, (ix) Kodak, (x) Favre-Leuba. (N. D, A. May '60)

Ans. (i) Battery (Torch), (ii) Motor Car, (iii) Soap-(iv) Scooter, (v) Baby Milk-power, (vi) Woollen cloth, (vii) Sewing machine, (viii) Bicycle, (ix) Film (x) Watches.

Q. 7. Why do we celebrate the following days ?

(i) 23rd January (ii) 26th January, (iii) 15th August, (iv) 2nd October, (v) 14th November (Stenos Aug. '65)

Ans. (i) Netaji Subhash Chander Bose's Birtday, (ii) India's Republic Day, (iii(India's Independence Day, (iv) Mahatma Gandhi's Birthday, (v) Jawahar Lal Nehru's Birthday, celeberated as Children's Day.

Q. 8. On what dates do we celebrate the following, and why ?

(i) Martyrs Day ; (ii) Republic Day ; (iii) Children's Day. (S. C. R. A. June '65)

Ans. (i) January 30 (anniversary of Gandhiji's martyrdom); (ii) January 26 (anniversary of the inauguration of the Republic of India); (iii) November 14 (Chacha Nehru's birth anniversary).

Q. 9. Give the dates of the following days :—

(i) Republic Day (ii) Martyr's Day (iii) Teachers' Day (iv) Children's Day (v) U. N- O. Day (vi) Navy Day.

(N. D. A. Dec. '66)

Ans. (i) 26th January, (ii) 30th January, (iii) 5th September, (iv) 14th November (v) 24th October, (vi) 21st December.

WEL-KNOWN ARTISTS

Q. 1. With which of the arts do you associate the following person ?—Mention their nationality.

(i) Satyajit Ray; (ii) Picasso; (iii) Galina Ulanova; (iv) Bismillah Khan.

(Indian Navy Dec. '64)

Ans. (i) Indian film-producer and director; (ii) Spanish painter; (iii) Russian Ballot Dancer; (ivi Indian Shehnai player.

Q. 2. Name the arts associated with the following :—

(i) Van Gogh, (ii) Epstein, (iii) Mrs. Rukmini Devi Arundale, (ix) Ravi Verma, (v) Ravi Shankar, (v) Hirabai Barodkar.

(I. M. A. June '66)

Ans. (i) Painting, (ii) Sculpture; painting, (iii) classical dance (Bharat-Natyam); (iv) painting, (v) Sitar, (vi) vocal music.

Q. 3. State the branch of Arts, Science, or Literature in which the following persons have excelled :—

(i) Beethoven, (ii) J. V. Narlikar, (iii) Prem Chand Munshi, (iv) M. S. Subbulaxmi, (v) D. P. Roy Choudhry, (vi) Bimal Roy, (vii) Ravi Shankar, (viii) Dr. H. J. Bhabha, (ix) Leonardo da Vinci, (x) Epstien.

(Income-tax Inspector '66)

Ans. (i) music, (ii) science, (iii) literature, (iv) music, (v) painting, (vi) film direction, (vii) sitar, (viii) science, (ix) painting ; sculpture, (x) sculpture.

Q. 4. Name the special fields of the following :—

(i) Picasso, (ii) Epstein, (iii) Vilayat Khan, (iv) Balraj Sahni, (v) Guru Gopinath, (vi) Josh Malihabadi, (vii) Upendra Nath Ashk, (viii) Sri Aurobindo, (ix) Somerset Maugham, (x) G. Sankara Kurup. (S. C. R. A. 1966)

Ans. (i) Painting, (ij) sculpture (iii) sitar, (iv) film-acting, (v) dance, (vi) Urdu poetry, (vii) Urdu literature, (viii) mysticism ; Yoga, (ix) English fiction, (x) poetry (Malayalam).

FAMOUS ARTISTS

Belonging to Foreign Countries

Name	*Nationality*	*Arts with which Associated*
1. **Epstein** (1880.1959)	American	Sculpture
2. **Cezanne** (1839-1906)	French	Painting
2. **Ceethoven** (1770-1827)	German	Composer & musician
4. **Chopin** (1810-1849)	Polish	Pianist & Composer
5. **Frank Lloyd Wright** (1869-1959)	American	Architecture
6. **Cecil B. De Mello**	American	Film production (Hollywood)
7. **Anna Pavlova** (1885-1931)	Russian	Dancing
8. **Mozart** (1756-91)	Austrian	Composer & musician
9. **Raphael** (1483-1520)	Italian	Painting
10. **Leonardo da Vinci** (1452-1512)	Italian	Painting
11. **Van Gogh** (1853-90)	Dutch	Painting
12. **Corbusier**	French	Architecture (He designed Chandigarh)
13. **Picaso**	Spain	Painting
14. **Galina Ulanova**	Russian	Ballot dancing

IMPORTANT MISC. FACTS

Currencies (Monetary Units)

Q. 1. Give the names of countries in which the following currency is used :—

(i) Yen, (ii) sterling, (iii) dollar and (iv) rouble.
(UPSC Clerks' June '66)

Ans. (i) Japan. (ii) Britain, Lebanon, S. Africa, U.A.R. (iii) U.S.A., Australia, Canada, Ethiopia, Hong Kong, Malaysia. (iv) U.S.S.R.

Q. 2. Name the currencies of the following countries :—

(i) Italy, (ii) Germany, (iii) Iran, (iv) Denmark, (v) Kyat.
(Income-tax Inspectors '66)

Ans. (i) Lira, (ii) Mark, (iii) Rial, (iv) Krone, (v) Kyat.

Q. 3. Name tne currencies of the following countries :—

(i) Japan, (ii) Burma, (iii) Holland, (iv) Indonesia (v) Norway, (vi) Greece, (vii) Iraq, (viii) Cuba and (ix) U.S.S·R.
(I.M.A. May '67)

Ans. (i) Yen, (ii) Rupee, Kyat, (iii) Florin, (iv) Rupiah, (v) Krone, (vi)Drachma, (vii) Dinar, (viii) Peso, (ix) Rouble.
(I.M.A. May '67)

Q . 4. Name of currencies of the following countries :—

(i) Belgium, (ii) Greece, (iii) Iran, (iv) Poland, (v) Yugoslavia.
(Clerks' Grade Junn '67)

Ans. (i) New France, (ii) Drachma, (iii) Rial, (iv) Zloty, (v) Dinar.

Q. 5. Mention the names of currencies of the following countries :—

(i) U.S.A. (ii) Great Britain (iii) Italy (iv) Japan (v) Russia (vi) West Germany (vii) France (viii) Ceylon (xi) Netherlands (x) Philippines.
(N.D.A. May '65)

Ans. [i] Dollar [ii] Sterling [Pound] [iii] Lira [iv] Yen [v] Rouble [vi] Mark [vii] New Fraece [viii] Rupee [ix] Guilder

Q. 6. Give the names of currencies of the following countries :—

[i] Sweden, [ii] Norway, [iii] Netherlands, [iv] Poland, [v] Greece, [vi] Switzerland, [vii] Burma, [viii] Iran, [ix] Japan, [x] Russia, [xi] Italy and [xii] Indonesia. [I.M.A. Nov. '65]

Ans. [i] Krone, [ii] Krone, [iii] Guilder, [iv] Zloty, [v] Drachma, [vi] New Franc, [vii] Rupee, Kyat, [viii] Rial, [ix] Yen, [x] Rouble, [xi] Lira, [xii] Rupiah.

SPORTS

Q. 1. (a) (i) **How many gold medals each did India and Japan win in the last Asian Games ?**

(ii) **In what events did the following win gold medals ?**

Bhim Singh, Parveen, Ajmer Singh and Hawa Singh.

(b) **What are following terms used for ?** (*Three to four lines each.*)

(i) Hat-trick, (ii) deuce, (ii) bully, (iv) short corner and (v) leg before wicket (l.b.w.).

(c) **With what games are the following trophies associated ?—**

(i) Durand Cup, (ii) Ranji Trophy, (iii) Davis Cup, (iv) Aga Khan Cup and (v) Thomas Cup. (Stenos June '67)

Ans. (a) (i) India won seven gold medals and Japan 78. (ii) Bhim Singh—*high-jump* ; Parveen—*Discus throw* ; Ajmer Singh—*400-Metres race* ; Hawa Singh—*Boxing (heavyweight).*

(b) Refer Chapter on Sports and Games.

(c) (i) Football, (ii) Cricket, (iii) Lawn Tennis, (iv) Hockey, (v) Badminton (International).

Q. 2. State the number of gold, silver and bronze medals the Indian sportsmen won in the last Fifth Asian Olympic Games held at Bangkok. (N.D.A. May '67)

Ans. India won 7 gold, 3 silver and 11 bronze medals in the fifth Asian Games.

Q. 3. (a) **With what games/sports are the following associated ?—**

(i) I. F. A. Shield, (ii) Irani Cup, (iii) Jayalaxmi Cup, (iv) Jaideep Mukherjea, (v) Bhim Singh, (vi) Mihir Sen.

(b) **Explain the following terms :—** (*Answer not to exceed 2 lines in each case.*)

(i) Checkmate, (ii) Dead heat.

(UPSC Clerks' Grade June '67)

Ans. (a) (i) Football, (ii) Cricket, (iii) Table Tennis, (Women), (iv) Lawn Tennis, (v) High-jump, (vi) Ocean-swimming.

(b) Refer chapter on Sports and Games.

Q. 4. With which games or sports do you associate the following ?—

(i) Davis Cup, (ii) Ranji Trophy, (iii) Durand Cup, (iv) Balbir Singh and (v) Donald Campbell.

(S. C. R. A. June '67)

Ans. (i) Lawn Tennis, (ii) Cricket, (iii) Football, (iv) Hockey, (v) Water speed.

Q. 5. In which games are the following terms used ?—

(i) Short corner, (ii) half-velley, (iii) checkmate, (iv) googly, (v) Off-side, (vi) sticks, (vii) chukker, (viii) no-ball, (ix) little slam and (x) leg-break. (N.D.A. May '67)

Ans. (i) Hockey, (ii) Lawn Tennis and Table Tennis, (iii) Chess, (iv) Cricket, (v) Hockey and Football, (vi) Hockey, (vii) Polo, (viii) Cricket, (ix) Bridge, (x) Cricket.

Q. 6. With what sports or games are the following associated ?—

[i] Balbir Singh [Railways], [ii] Corbillion Cup, [iii] Jaideep Mukherjee, [iv] R. Kanhai, [v] B. Barua, [vi] Wembley, [vii] Googly, [viii] Caddie, [ix] Ascot, [x[Bob Marshall, [xi] Cox, [xii] Parveen Kumar [xiii] Maharaja Karni Singh, [xiv] M. Jegathesan, [xv] Rohinton Baria Trophy.

(I.M.A. May '67)

Ans. [i] Hockey, [ii] World Table Tennis [Women] [iii] Lawn Tennis, [iv] Cricket, [v] Athletics [Races], [vi] Association Football, [vii] Cricket, [viii] Golf, [ix] Circular Race Cource, [x] Billiards, [xi] Boat race, [xii] Discus throw, [xiii] shooting, [xiv] Athletics—Races, [xv] Cricket.

Q. 7. **With what games/sports are the following mainly associated ?—**

[i] Mihir Sen, [ii] Vijaya Manjrekar, [iii] Gautam Diwan, [iv] Manuel Santana, [v] Ranji Trophy, [vi] Penalty kick, [vii] Bull's eye, [viii] Dummy. (N.D.A. Dec. '66)

Ans. [i] Ocean swimming, [ii] Cricket, [iii] Table Tennis, [iv] Lawn Tennis, [v] Cricket, [vi] Football, [vii] Rifleshooting [centre of target], [viii] Bridge.

Q. 8. [a] **In what games and sports are the following terms used ?—**

[i] Dummy, [ii] Guly, [iii] Follow-on, [iv] Let, [v] Check, [vi] Cue, [vii] Penalty, [viii] Rubber.

[b] **With what are the following associated ?—**

[i] Ranji Trophy, [ii] Santosh Trophy, [iii] Thomas Cup, [iv] Wimbledon. (Indian Navy Dec. '66)

Ans. [a] [i] Bridge, [ii] Cricket, [iii] Cricket, [iv] Badminton, [v] Chess, [vi] Billiards, [vii] Hockey, [viii] Cricket.

[b] [i] Cricket, [ii] Football, [iii] Badminton [International], [iv] Lawn Tennis.

Q. 9. [a] **Name the five places where the Asian Games were held.**

[b] **Who are the three famous Ws in cricket ?**

(I.M,A. May '67)

Ans. [a] New Delhi [India], Manila [Philippines], Tokyo [Japan], Jakarta [Indonesia] and Bangkok [Thailand].

[b] Worrel, Walcott and Weeks.

Q. 10. **In what games /sports are the following terms used ?**

[i] Cannon, [ii] stonewalling, [iii] bull's eye, [iv] dummy, [v] penalty bully, [vi] knock out, [vii] corner kick, [viii] l.b.w.

(UPSC Clerks, Grade June '66)

Ans. [i] Billiards, [ii] Cricket, [iii] Rifle-shooting [centre of target], [iv] Bridge, [v] Hockey, [vi] Boxing, [vii] Football, [viii] Cricket.

WHO'S WHO

Recently-set Questions with Answers

Q. 1. Name the following :—

(i) Chief Justice of India, (ii) Governor of Punjab, (iii) Chief of Army Staff, (iv) Winner of I.F.A. Shield, (v) Captain of the West Indies Cricket Team which toured England last, (vi) Individual who swam the English Channel, the Palk Straits and the Darnanelles. (Assts. Grade 1967)

Ans. (i) K. N. Wanchoo, (ii) D. C. Pavate, (iii) Gen. P. P. Kumaramangalam, (iv) East Bengal (1966), (v) G. Sobers, (vi) Mihir Sen.

Q. 2. Name the ruler or head of the following Governments :—

(i) Nationalist China. (ii) Ireland, (iii) Ethiopia, (iv) Pakistan, (v) Burma. (N.D.A May '67)

Ans. (i) Chiang-Kai-Sheik (ii) De Valera, [iii] Haile Selassie, [iv] Ayub Khan, [v] Dr. Win Maung.

Q. 3. Who are the following ?—

[i] Arthur Goldberg, [ii] G, Parthasarathy, [iii] Dean Rusk, [iv] De Gaulle, [v] Harold Wilson, [vi] Dr. K. G. Kiesinger, [vii] Nikolai Podgorny, [viii] Nasser, [ix] Dr. Ho Chi-Minh and [x] Leonid Brezhnev. (N.D.A. May '67)

Ans. [i] U. S. representative in the U.N.O., [ii] Indian representative in the U.N.O., [iii] Secretary of State, U.S.A., [iv] President of France, [v] Prime Minister of U. K., [vi] Chanceller of West Germany, [vii] President of the U.S.S.R., [viii] Prime Minister of U. A. R., [ix] President of North Viet Nam, [x] First Secretary of the Communist Party, U.S.S.R.

Q. 4. Name the following :—

[i] President of the Indian National Congress, [ii] President of France, [iii] Vice-President of the U.S.A., [iv] Prime Minister of Ceylon, [v] Chief of the Army Staff of India.

(Clerks' Grade June '67)

Ans. [i] K. Kamaraj, [ii] Charles de Gaulle, [iii] Hubert Humphrey, [iv] Dudley Senanayak, [v] Gen P. P. Kumaramangalam.

Q. 5. State the names of the following :—

(i) Vice-President of U. S- A. (ii) Vice-President of India, (iii) President of I. N. T. U. C. (iv) Indian Nobel Prize winner in Physics. (v) Mrs. Indira Gandhi's opponent for the Prime Ministership of India. (vi) Chairman of the Revolutionary Council of Burma. (vii) President of France. (viii) Prime Minister of the U. S. S. R. (ix) President of Kenya. (x) The Country which recently seceded from the British Commonwealth and proclaimed its independence. (xi) The country, outside the U. N. O., that has exploded the atom bomb. [N. D. A. May '66]

Ans. (i) Hubert Humphrey. (ii) V. V. Giri. (iii) V. V. Dravid. (iv) Dr. C. V. Raman. (v) Morarji Derai. (vi) Gen. Ne Win. (vii) Gen. de Gaulle. (viii) A. Kosygin. (ix) Jomo Kenyatta. (x) Rhodesia. (xi) People's Republic of China.

Q. 6. Name the following :—

[a] Captain of the Indian Hockey Team for the Fifth Asian Games.

[b] U. S. Agriculture Secretary.

[c] Chancellor of the Federal Republic of Germany.

[d] President of the Asian Development Bank.

[e] President of the Republic of the Philippines.

[f] President of the United Arab Republic.

[g] President of the World Bank.

[h] President of the U. S. S. R.

[i] Chief Minister of Nagaland.

[j] Chief Election Commissioner of India.

[k] Chief Minister of Haryana State.

[l] Defence Minister of the People's Republic of China.
[I. M. A. May '67]

Ans. (a) Shankar Laxman, (b) Orville Freeman (c) K. G. Kesinger, (d) Takashe Watanabe (of Japan), (e) Ferdinand

Marcos, (f) Gamal Abdel Nasser, (g) Robert Mcnamara (h) Nikolai Podgorny, (i) T. N. Angami, (j) K. V. K, Sundaram, (k) Rao Birendra Singh (His Ministry dismissed on 21-11-67), (l) Lin Piao.

Q. 7. Give the names of the following :—

(i) The Chancellor of West Germany, (ii) The Chief Justice of India, (iii) The Winner of the Nehru Peace Award this year, (iv) The President of France, (v) The Chairman of the University Grants Commission, [S. C. R. A. 1967]

Ans. (i) K.G. Keisinger, (ii) K.N. Wanchoo, (iii) U Thant (iv) Charles de Gaulle, (v) Dr. D.S. Kothari.

Q. 8. Who are/were the following ? (*About two lines for each*).

(i) Guru Gobind Singh. (ii) Kabir. (iii) Vimal Roy. (iv) Abanindranath Tagore, (v) Dr. H. G. Bhabha. (vi) Sheikh Mohammad Abdullah. [N. D. A. May '66]

Ans. 1. **Guru Gobind Singh** : The tenth and the last Guru of the Sikh—founder of the Sikh power. Most of his life was spent in fighting with the Mughals.

(ii) **Kabir** : A mystic Indian poet, disciple of Ramananda. Born in the year 1398 A. D. Has written many *dohas* and *Bhajans* which are very popular.

(iii) **Vimal Roy** : Famous film director of India. Some of the films directed by him was his international recognition.

(iv) **Abanindranth Tagore** : Famous Indian artist; founder of the Modern Indian School of Painting.

(v) **Dr.H.J. Bhabha** : Renowned Indian Scientist; Chairman, Atomic Energy Commission, India ; died in plane crash on January 24, 1966.

(vi) **Sheikh Abdullah** : Formerly leader of the National Movement in kashmir. Became Prime Minister of the State in November 1947 but was arrested in August 1953 for his unpatriotic activities. As present he is under house arrest in New Delhi.

ABBREVIATIONS

A

A.A.	Anti-Aircraft
A.A.A.	Amateur Athletic Association
A.A.F.	Auxiliary Air Force
A.A.Q.M.G.	Assistant Adjutant Quartermaster-Gen.
A.B.A.	Amateur Boxing Association
A.B.C.	Atomic Bacteriological and Chemical Weapons
abinit	Ab initio (from the beginning)
A.B.M	Anti Ballistic Missile
A.C.A.	Associate of Chartered Accountants
Acad.	Academy
A.D.	*Anno Domini*
A.D.B.	Asian Development Bank
A.D.C.	Aide-de-Camp
Adj.	Adjutant, Adjective
ad. lib.	As much as desired *(L. ad libitum)*
A.E.C.	Atomic Energy Commission
A.E.U.	Amalgamated Engineering Commission
A.F.M.	Air Force Medal
A.H.Q.	Army Head Quarter
A.I.A.A.	All India Automobile Association
A.I.C.C.	All India Congress Committee
A.I.D.	Agency for International Development
A.I.F.A.C.	All India Fine Arts and Crafts (Society)
A.I.N.E.C.	All India Newspaper Editors' Conference
A.I.R.	All India Radio
A.I.R.F.	All India Railwaymen Federation
A.I.T.U.C.	All India Trade Union Congress
A.I.N.T.U.C.	All India National Trade Union Congress
A.I.W.C.	All India Women's Conference
A.I.Y.F.	All India Youth Federation
A.M.	Air Ministry, Anti-meridian
Anon	Anonymous
A.N.S.	Army Nursing Service
A.O.	Army Order
A.O.C.	Air Officer Commanding
A.P.T.C.	Army Physical Training Corps
A.R.A.	Associate Royal Academy

D. D.	Doctor of Divinity
D. D. A.	Dandakaranya Development Authority
D. D. G.	Deputy Director General
D. D. T.	Dichloro-Diphenyl Trichloro ethane (disinfectant)
D. E.	Daily Express
D. F.	Defender of Faith
D. F. C.	Distinguished Flying Cross
D. L. O.	Dead Letter Office
D. M. K.	Dravida Munnetra Kazhagam
D. N. B.	Dictionary of National Biography
D. O. M.	To God, best and greatest
D. O. R. A.	Defence of the Realm Act
D. Ps.	Displaced Persons
D. P. H.	Diploma in Public Health
D. Phil.	Doctor of Philosophy
D. P. I.	Director of Public Instruction
D. S.	Distinguished Service
D. Sc.	Doctor of Science
D. S. M.	Distinguished Science Medal
D. S. O.	Distinguished Service Order
D. T.	Daily Telegraph; Director of Theology
D. V. C.	Damodar Valley Corporation

E

E. A. C.	Extra Assistant Commissioner
E. R.	Eastern Railway
E. C. A.	U.S. Economic Co-operation Administration (for European Recovery Programme)
E. C. A. F. E.	Economic Commission for Asia and Far East.
E. C. M.	European Common Market
E. C. O.	Emergency Commissioned Officer
E. D. C.	European Defence Community
E. E. C. E.	Emergency Economic Committee for Europe
E. F. T. A.	European Free Trade Association or Area
E. M. F.	Electro Motive Force
E. & O. E.	Errors and Ommissions are Excepted
E. R. P.	European Recovery Programme
ESSO (S.O.)	Standard Oils

F

F.A.M.	Free and Accepted Masons
F.A.O.	Food and Agricultural Organisation
F.A.S.	Fellow of the Arts Society
F.B.A.	Fellow of the British Academy
F.B.I.	Federation of British Industries
F.C.I.	Food Corporation of India.
F.I.C.A.	Fellow of the Institute of Chartered Accountants
F.I.C.C.I.	Federation of Indian Chambers of ‘Commerce and Industry’
F.I.A.	Fellow of the Institute of Actuaries
Flt.L.	Flight Lieutenant
F.O.P.	Forward Observation Post
F.P.A.	Foreign Press Association
F.P.S.C.	Federal Public Service Commission
F.R.Ae.S.	Fellow of the Royal Aeronautical Society
F.R.A.S.	Fellow of the Royal Astronomical Society
F.R.C.P.	Fellow of the Royal College of Physicians
F.R.C.S.	Fellow of the Royal College of Surgeons
F.R.C.V.S.	Fellow, Royal College of Veterinary Surgeons
F.R.S.E.	Fellow of the Royal Society of Engineers
F.R.E.S.	Fellow, Royal Economic Society
F.R.G.S.	Fellow, Royal Geographical Society
F.R. Hist. S.	Fellow, Royal Historical Society
F.R. Hort. S.	Fellow, Royal Horticultural Society
F.R.N.S.	Fellow, Royal School of Naval Architecture
F.R.S.	Fellow, Royal Society
F.R.S.A.	Fellow, Royal Society of Arts
F.R.S.L.	Fellow of the Royal Society of Literature
F.R.S.S.	Fellow of the Royal Statistical Society
F.S.A.	Fellow of Society of Antiquaries
F.S.I.	Fellow of Chartered Surveyor's Institution
F.S.R.	Field Service Regulation
F.S.S.	Fellow, Statistical Society
F.Z.S.	Fellow, Zoological Society

G

G.A.T.T.	General Agreement on Tariffs and Trade
G.C.	George Cross
G.C.B.	Knight Grand Cross of the Bath
G.C.M.	Greatest Common Measure
G.C.M.G.	Knight Grand Cross of St. Michael and St. George
G.C.S.I.	Knight Grand Commander of the Star of India
G.C.V.O.	Knight Grand Cross of the Victorian Order
G.D.R.	German Democratic Republic
G.E.C.	General Electric Co.
G.H.Q.	General Headquarters
G.I.	Government Issue (American soldiers have humorously adopted this word to themselves)
G.M.I.	Grand Master of Indian Empire
G.M.S.I.	Grand Master of the Star of India
G.M.T.	Greenwich Mean Time
G.O.C.	General Officer Commanding
G.O.C-in-C.	General Officer Commanding-in-Chief
G.P.O.	General Post Office
G.S.N.C.	General Steam Navigation Company

H

H.C.	House of Commons
H.C.F.	Highest Common Factor
H.E.	His Excellency. His Eminence
H.E.L.	Heavy Electricals Ltd.
H.E.H.	His Exalted Highness
H.H.	His (or Her) Highness. His Holiness
H.I.M.	His (or Her) Imperial Majesty
H.M.S.	His (or Her) Majesty's Service
H.M.T.	Hindustan Machine Tools
H.P.	Himachal Pradesh
H.R.	House of Representatives
H.R.E.	Holy Roman Empire
H.R.I.P.	Here Rests In Peace
H.W.M.	High Water Mark

I

I.A.C.	Indian Armoured Corps; Indian Air Lines Corporation
I.A.E.A.	International Atomic Energy Agency
I.A.F.	Indian Air Force
I.A.M.C	Indian Army Medical Corps
I.A.R.I.	Indian Agricultural Research Institute
I.A.R.O.	Indian Army Reserve Officers
I.A.S.	Indian Administrative Service
I.A.T.A	International Air Transport Association
I.B.R.D.	International Bank for Reconstruction and Development
I.C.	Intelligence Corps
I.C.A.	Institute of Chartered Accountants
I.C.A.O.	International Civil Aviation Organization
I.C.A.R.	Indian Council of Agricultural Research
I.C.C.	International Control Commission
I.C.E.	Institute of Civil Engineers
I.C.F.T.U.	International Confederation of Five Trade Unions
I.C.I.	Imperial Chemical Industries
I.C.J.	International Court of Justice
I.C.S.	Indian Civil Service
I.C.S.C.	International Commission for Supervision and Control (for Indo-China)
I.D.	Intelligence Department
I.D.O.	International Defence Organization
I.D.S.M.	Indian Distinguished Service Medal
I.E.F.C.	International Emergency Food Commission
I.E.N.C.	Indian and Eastern Newspaper Society
I.F.A.	Indian Football Association
I.F.C.	International Finance Corporation
I.C.W.A.	Indian Council of World Affairs
I.F.S.	Indian Forest Service; Indian Foreign Service
I.F.T.U.	International Federation of Trade Unions
I.F.W.J.	Indian Federation of Working Journalists
I.I.T.	Indian Institute of Technology
I.I.M.C.	Indian Institute of Mass Communication
I.J.	Institute of Journalists

I.L.O.	International Labour Organization
I.L.P.	Independent Labour party
I.M.A.	Indian Military Academy
I.M.C.	Interim Metropolitan Council
I.M.F.	International Monetary Fund
I.M.P.P.A	Indian Motion Picture Producers' Association
I.M.S.	Indian Medical Service
I.N.A.	Indian National Army ; Indian National Airways
I.N.V.R.	Indian Naval Volunteer Reserve
I.N.C.	Indian National Congress
I.N.T.U.C.	Indian National Trade Union Congress
I.O.C.	Indian Oil Corporation
I.O.J.	International Organization of Journalists
I.OA.	Indian Olympic Association
I.O.U.	I Owe You
I.P.S.	Indian Police Service
I.P.H.A.	(The) Indian Public Health Association
I.R.C.	International Red Cross
I.R.O.	International Refugee Organization
I.S.E.	Indian Service of Engineers
I.S.O.	Indian Service Order
I.S.R.	Indian State Railway
I.S.T.	Indian Standard Time
I.S.C.S.	Indo-Soviet Cultural Society
I.S.I.	Indian Standard Institute
I.T.O.	International Trade Organization
I.T.I.	Indian Telephone Industries
I.T.U.C.	International Trade Union Congress
I.V.S.	Indian Veternary Service
I.W.W.	Industrial Workers of the War

J

J.C.O.	Junior Commissioned Officer
J.P.	Justice of the Peace
Jr.	Junior
Jurisp.	Jurisprudence

K

K.A.N.U.	Kenya African National Union
K.A.D.U.	Kenya African Democratic Union
K.B.	King's Bench ; Knight of the Bath

K.B.E.	Knight Commander, Order of the British Empire
K.C.	King's Counsel ; King's College
K.C.B.	Knight Commander of the Bath
K.C.M.G.	Knight Commander, Order of St. Michael and St. George
K.C.S.I.	Knight Commander of the Star of India
K.G.C.B.	Knight Grand Cross of the Bath
K.G.	Knight of the Garter
K.G.F.	Knight of the Golden Fleece
K.I.H.	Kaiser-i-Hind Medal
K.L.H.	Knight of the Legion of Honour
K.K.K.	Ku Klux-Klan
K.M.P.P.	Kisan Mazdoor Praja Party
K.M.T.	Kuomintang (Govt. Party under Chaing Kai-Shek)
Kt.	Knight

L

L.C.	Lord Chancellor, Lord Chamberlain
L.C.J.	Lord Chief Justice
L.C.M.	Least Common Multiple
L.D.S.	Licentiate in Dental Surgery
Ltd.	Limited
Lieut.	Lieutenant
Litt. D.	Doctor of Literature
L.I.C.	Life Insurance Corporation
L.J.	Lord Justice
L.L.B.	Bachelor of Laws
L.L.D.	Doctor of Laws
L.N.	League of Nations
L.O.C.	Line Of Communications
L.P.	Labour Party ; Letters Patent
Log.	Logarithm
L.R.C.P.	Licentiate of Royal College of Physicians
L.R.C.	Licentiate of the Royal College of Surgeons
L.s.d.	Pounds, shillings, pence
L.T.C.	Lawn Tennis Club
Lt. Col.	Lieutenant Colonel

M

M.A.	Master of Arts
M.A.C.	Military Armistice Commission (on Korean negotiation)
M.B.B.S.	Bachelor of Medicine and Bachelor of Surgery
M.C.	Military Cross; Member of Congress
M.C.L.	Master of Civil Law
M.Com	Master of Commerce
M.D.	Doctor of Medicine
M.D.S.	Master of Dental Surgery
M.E.D.O.	Middle East Defence Organisation
M.E.C.	Member of Executive Council
Memo.	Memorandum
M.E.S.	Military Engineering Service
M.C.C.	Marylebone Cricket Club
M.G.G.S.	Major-General, General Staff
M.I.C.E.	Member of the Institute of Civil Engineering
M.I.N.A.	Member, Institute of Naval Architects
M.L.A.	Member of Legislative Assembly
M.M.	Military Medal
M.N.S.	Member of Numismatical Society
M.N.F.	Mizo National Front
M.M.G.	Medium Machine Gun
M.O.	Medical Officer; Money Order
M.O.H.	Medical Officer of Health
M.O.I.	Ministry of Information
M.P.	Member of Parliament
m.p.h.	miles per hour
M.R.	Master of the Rolls
M.R.A.S.	Member of the Royal Asiatic Society
M.R.C.P.	Member of the Royal College of Physicians
M.S. or M.S.S.	Manuscript (s)
M.R.I.	Member of the Royal Institute
M.S.C.	Madras Staff Corps; Medical Staff Corps
M.Sc.	Master of Science
M.S.S.	Military Staff Committee of Security Council
M.R.S.T.	Member of Royal Society of Teachers
M.V.C.	Mahavir Chakra
M.T.B.	Motor Torpedo-Boat
M.T.C.	Mechanised Transport Corps

M.V.D.	The Soviet Secret Police is called by this abbreviated name
M.V.O.	Member of the Victorian Order

N

Naut.	Nautical
N.A.A.C.P.	National Association for the Advancement of Coloured People
N.A.A.F.I.	Naval, Army and Air Force Institute
N.A.T.C.	North Atlantic Treaty Council
N.A.T.O.	North Atlantic Treaty Organization
N.B.	*nota bena*—Note well or take notice
N.B.C.	National Broadcasting Corporation (U-S-A-)
N.C.A.E.R.	National Council of Applied Economic Research
N.C.C.	National Cadet Corps
N.C.D.C.	National Coal Development Corporation
N.C.O.	Non-Commissioned Officer
N.C.D.A.	National Coal Development Authority
N.D.C.	National Development Council
N.D.S.	National Discipline Scheme
N.E.F.A.	North East Frontier Agency
N.E.R.	North Eastern Railway
N.E.F.R.	North East Frontier Railway
N.N.O.	Nagaland Nationalist Organization
N.N.E.	North-north-east
N.N.R.C.	Neutral Nations' Repatriation Commission
N.N.W.	North-north-west
N.R.A.	National Recovery Administration
non seq.	It does not follow
n.o.p.	Not otherwise provided
N.U.R.	National Union of Railwaymen
N.U.S.E.C.	National Union of Societies for Equal Citizenship
N.E.S.	National Extension Service
N.V.F.	National Volunteer Force

O

O.A.S.	Organization for American States; Secret Army Organization (Algeria)

O.A.U.	Organization of African Unity
O.C.	Officer Commanding
O.C.T.U.	Officer Cadets Training Unit
O.E.E.C.	Organisation for European Economic Co-operation
O.E.D.	Oxford English Dictionary
O.H.M.S.	On His Majesty's Service
O.G.L.	Open General Licence
O.I.G.S.	On India Government Service
O.K.	All Correct (Slang)
O.M.	Order of Merit
O.N.G.C.	Oil and Natural Gas Commission
O.T.C.	Officers' Training Corps
O.U.P.	Oxford University Press
Oxon.	Of Oxford University

P

P.A.	Personal Assistant
P.A.A.	Pan American Airways
P.A.C.	Pan American Cathays (Air Lines)
P.A.C.	Public Account Commission
P.A.T.A.	Pacific Area Travellers Association
P.A.Y.E.	Pay as you earn (income tax)
P.C.	Privy Council
P·C.S.	Provincial Civil Service
p.c.	per cent
P.E.N.	Poets, Essayists and Novelists (An International Organisation)
P.E.P.	Political and Economic Planning
P.G.M.	Post Grand Master
Ph.D.	Doctor of Philosophy
P.M.	Prime Minister ; Past Meridian—Afternoon
P.M.G.	Post Master Genera
P.O	Pilot Officer
P.O·A.C.	Pacific Overseas Air Lines Corporation
P.O W.	Prisoner of War
P.P..P.	Peoples Progressive Party (of New Guinea)
P.R.A.	President of the Royal Academy
P.R.D.	Prantiya Raksha Dal
P.R.O.	Public Relations Officer

P.S.	Postscript
P.S.F.C.	Pacific Steam Navigation Co.
P.S.P.	Praja Socialist Party
P.P.S.	Parliamentary Private Secretary
P.T.I.	Press Trust of India
P.W.D.	Public Works Department
P.W.R.	Pelice War Reserve

Q

Q.E.D.	That which was te be proved (quod erat demonstrandum)
Q.E.F.	Quod Erat Faciendum, which was ty be done
Q.M.G.	Quartermaster-General
Q.M.S.	Quartermaster-Sergeant
Q.V.	Quod Vide (which see)

R

R.A.	Royal Academician
R.A.F.	Royal Air Force
R.A.F.V.R.	Royal Air Force Volunteer Reserve
R.A.M.C.	Royal Army Medical Corps
R.A.O.C.	Royal Army Ordnance Corps
R.A.S.	Royal Astronomical Society
R.A.S.C.	Royal Army Service Corps
R.B.	Rai Bahadur; Rao Bahadur
R.C.A.F.	Royal Canadian Air Force
R.C.C.	Reinforced Cement Concret; Roman Catholic Church
R.C.P.I.	Revolutionary Communist Party of India
r.d.	refer to drawer (of an overdrawn cheque)
Regt.	Regiment
R.F.A.	Royal Field Artillery
R.F.C.	Royal Flying Corps
R.G.A.	Royal Garrison Artillery
R.G.S.	Royal Geographical Society
R.H.A.	Royal Horse Artillery
R.H.S.	Royal Historical Society
R.I.N.	Royal Indian Navy
R.I.P.	Rest in Peace
R.M.	Royal Marines; Royal Mail

R.M.A.	Royal Military Academy
R.M.C.	Royal Military College
R.M.L.I.	Royal Military Light Infantry
R.M.S.	Royal Military Steamer; Railway Mail Service
R.N.A.	Ribonucleic Acid
R. N. A. F.	Royal Naval Air Force
R.N.V.R.	Royal Navy Volunteer Reserve
R.R.C.	Royal Red Cross
R.S.F.S.R	Russian Soviet Federal Socialist Republic
R.S.S.	Rashtriya Sewak Sangh
R.S.M.	Royal School of Mines
Rt. Hon.	Right Honourable
R.T.C.	Round Table Conference
R.T.O.	Royal Transport Officer

S

S.A.	South Africa
S.B.	Sardar Bahadur
S.C.	Security Council of the U.N.
S.A.C.M.E.	Supreme Allied Command, Middle East
S.C.A.P.	Supreme Commander of Allied Powers
S.C.R.A.	Special Class Railway Apprentices
S.C.U.A.	Suez Canal Users' Association
S·D.F.	Social Democratic Federation
S.D.O.	Sub Divisional Officer
S.D.U.K.	Society of Diffusion of Useful Knowledge
S.E.A.C.	South East Asia Command
S.E.A.T.O	South East Asia Treaty Organization
S.E.A.D.	South East Asia Defence Organization
Sec.	Secretary
S.F.	Sinn Fein
S.G.	Solicitor-General
S.H.A.P.E.	Supreme, Headquarter of Allied powers in Europe
S.I.R.	South India Railway
S.J.A.B.	St. John's Ambulance Brigade
S.L.	Solicitor at Law
S.O.	Staff Officer

S.O.C.N.Y.	Standard Oil Co. New York
S.O.S.	Save Our Souls (Wireless signal of distress at sea)
S.P.C.A.	Society for the Prevention of Cruelty to Animals
S.P.C.K.	Society for Promoting Christian Knowledge
S.R.C.	States Reorganization Commission
S.R. & O.	Statutary Rules and Order
S.S.S.B.	Subordinate Services Selection Board
S.S.E.	South-south east
S.S.M.	Staff-Sergeant-Major
S.S.P.	Samyukta Socialist Party
S.S.W.	South-south-west
S.T.C.	State Trading Corporation
S.T.P.	Standard Temperature & Pressure
S.S.R	Soviet Socialist Republic
S.U.N.F.E.D.	Special U.N. Fund for Economic Development (of under-developed countries)
STANVAC.	Standard Vacuum Oil Company
S.V.P.	Saturated Vapour Pressure
S.V.D.	Samyukta Vidhayak Dal

T

T.A.	Territorial Army
T.B.	Tuderculosis
T.B.D.	Torpedo Boat Destroyer
T.C.	Trusteeship Council of the United Nations
T.C.A.	Technical Cooperation Aid
T.E.L.C.O.	Tata Engineering and Locomotive Company
T.I.S.Co.	Tata Iron & Steel Company
T.M.O.	Telegraph Money Order
T.N.T.	Tri-nitro-toluene (high explosive)
T.O.	Telegraph Office
T.T.C.	Travelling Ticket Checker
Tv.	Television
T.V.A.	Tennessee Valley Authority
T.U.C.	Trade Union Congress
T.W.A.	Trans World Airlines

U

U.A.R.	United Arab Republic
U.G.C.	University Grants Commission
U.K.	United Kingdom
U.N.A.	United Nations Association
U.N.A.C	United Nations Appeal for Children
U.N.C.I.	United Nations Commission for Indonesia
N.N.C.I.O.	United Nations Conference on International Organisation
✓ U.N.C.I.P.	United Nations Commission on India and Pakistan
✓ U.N.E.S.C.O.	United Nations Educational, Scientific and Cultural Organization
U.N.A.E.C.	United Nations Atomic Energy Commission
U.N.E.C.A.F.E.	United Nations Economic Commission for Asia and Far East
U.N.E.D.A.	United Nations Economic Development Administration
U.N.I.C.E.F.	United Nations International Children's Emergency Fund
U.N.I.D.O.	United Nations Industrial Development Organization
U.N.O.	United Nations Organization
U.P.	Uttar pradesh
U.S.I.S.	United States Information Service
U.S.S.R.	Union Soviet of Socialist Republics
U.S. or U.S.A.	United States of America
U.N.R.R.A.	United Nations Relief and Rehabilitation Administration
U.S.O.	United Schools Organization
U.P.S.C.	Union Public Service Commission

V

V^1	Flying Bomb
V^2	Rocket
V.C.	Victoria Cross, Vice Chancellor
V.D.	Volunteer Decoration; Venereal Disease
V. Day	Victory Day (Second World War)
V.G.	Vicar General

V.I.P.	Very Important Person
Vr.C.	Vir Chakra
V.P.P.	Value Payable Parcel
V.V.F.	Village Volunteer Force

W

W.A.Y.	World Assembly of Youth
W.A.A.C.	Women's Auxiliary Air Corps
W.E.U.	Western European Union
W.A.A.F.	Women's Auxiliary Air Force
W.C.T.G.	Women's Christian Temperance Guild
W.D.	War Department
W.F.T.U.	World Federation of Trade Unions
W.F.U.N.A.	World Federation of United Nations Association
W.H.O.	World Health Organization
W.I.R.	West India Regiment
W.M.O.	World Meterological Organization
W.N.W.	West north-West
W.O.	War Office
W.P.	Weather Permitting
W.R.A.C.	Women's Royal Air Corps
W.S.P.U.	Women's Social and Political Union
W.T.U.C.	World Trade Union Congress
W.V.S.	Women's Voluntary Service

X

X'mass	Christmas

Y

Y.M.C.A.	Young Men's Christian Association
Y.W.C.A.	Young Women's Christian Association

Z

Z.S.	Zoological Society

HISTORICAL DATA

WORLD HISTORY

IMPORTANT DATES

B.C.

5000—Early civilisation of Egypt.
5000—Indus-Valley civilisation of Mohenjodaro.
4241—Egyptian Calendar established; "Earliest dated event in history."
1913—Jerusalem emerges as a Hebrew City.
1000—Era of Zoroaster, founder of Persian religion.
933—Death of Solomon the Wise.
850—Homer flourished about this time.
826—Carthage founded.
776—First Olympiad in Greece.
753—Rome founded by Romulus.
551—Confucious born in China.
538—Cyprus founds Persian Empire.
490—Battle of Marathon
480—Battle of Thermopylae.
461-431—Golden Age of Pericles, Phidias and Sophocles.
399—Trial and death of Socrates.
399-347—Period of Plato and Aristotle; Demosthenes.
336-327—Alexander, King of Macedonia, conquers Persians and invades India.
323—Death of Alexander the great.
214—Great Wall of China completed.
58-51—Julius Caesar invades Gaul and Britain.
44—Julius Caesar assasinated. The Ides of March.
30—Death of Cleopatra. Egypt becomes a Roman Empire.
4—Generally accepted date of birth of Jesus of Nezareth.

A.D.

30 (?)—Jesus of Nazareth crucified
64—Burning of Rome and persecution of Christians under Nero.

79—Pompei and Herculeneum destroyed by eruption of Mount Vesuvius.
323—Constantinople founded.
570—Birth of Prophet Mohammed.
622—Flight of Mohammed from Mecca to Madina; Mohammedan Calendar on July 15 the date of this event.
1200—Founding of Universities of Oxford and Paris.
1206-27—Rise of Mongols under Chengez Khan.
1213—Changez Khan and his horde conquers China.
1215—Magna Carta granted to barons by King John.
1271—Marco Polo starts from Venice on his travels.
1295—First regular English Parliament composed of clergy, barons and knights.
1300—Beginning of Hundred Years War.
1302—Mariner's Compass invented by an Italian Flavio Qioja.
1348—The Black Death—plague in Europe.
1385—Period of Chaucer.
1415—Battle of Agincourt.
1431—Joan of Arc burnt at the age of 19.
1440—Printing was first invented.
1455-85—War of Roses in England.
1492—Columbus discovered America.
1498—Vasco-de-Gama reaches Calicut in India via sea.
1499—Switzerland becomes independent republic.
1513—Discovery of the Pacific by Balboa.
1519-22—Mexico conquered by Cortez.
1520—Luther burns the Pope's bull at Wittenburg.
1530—Fall of Cardinal Wolsey from power.
1532—Beginning of the Reformation in England.
1558-63—Reign of Elizabeth in England.
1564—Birth of Shakespeare (April 23).
1588—Defeat of Spanish Armada
1605—Gunpowder plot.
1618—Thirty Years War begins in Europe.
1627—War of Succession between Austria and France.
1642-1715—Reign of Louis in France.
1649—Charles I beheaded.
1649-58—Commonwealth established by Oliver Cromwell in England.

1660—Restoration of monarchy in England.
1688—Glorious Revolution.
1755—Samuel Johnson publishes his English dictionary.
1776—The declaration of American Independence (July 4).
1777—Edison invented phonograph; beginning of Russo-Turkish War.
1780—First newspaper published.
1789—Washington elected First President of the U.S.A.
1789-1799—The era of the French Revolution.
1805—Battle of Trafalgar : death of Nelson.
1805—Dissolution of Holy Roman Empire.
1815—Battle of Waterloo and defeat of Napoleon; Congress of Vienna.
1823—Monroe Doctrine proclaimed.
1833—British Parliament outlaws slavery in the Empire.
1837—Queen Victoria ascends the Throne.
1865—Ku Klux Klan Movement in America against Negro voters.
1870—Declaration of French-Republic (September 4).
1899—Boer War.
1905—Japan defeats Russia.
1910—The North Pole discovered by Commander Peary
1912—Republic established in China.
1914-18—First World War.
1917—Russian Revolution.
1918—President Wilson formulates his Fourteen Points of Peace. A Socialist Revolution occurs in Russia.
1919—Treaty of Versailles (June 28).
1923—Proclamation of Turkish Republic with Kamal Pasha as the first President.
1924—First Labour Government in Britain; Death of Lenin and assumption of power by Stalin in Russia.
1926—Germany admitted to the League of Nations.
Franklin D. Roosevelt elected U.S. President.
1933—Hitler becomes Chancellor of Germany.
Civil War in Austria.
1935—Italy invades Ethiopia. The declaration of the Saar plebiscite.

1935—Edward VIII of England abdicates. Civil War breaks out in Spain; Ethiopia is annexed by Mussolini.

1937—Coronation of King George IV.

1938—Munich Conference (September 30); Germany invades and annexes Austria.

1939—Britain and France declare War on Germany (September 3); Germany invades Poland.

1940—Germany invades Denmark, Norway, Holland, Belgium and Luxembourg; France signs armistice with Germany and Italy; President Roosevelt elected for the third term.

1941—Germany declares war against Russia; Atlantic Charter proclaimed; Japan declares war against the Allies; U.S.A. enters war after Japanese bombing of Pearl Harbour; Germany and Italy declare war against U.S.A.

1942—American forces under General Eisenhower land in North Africa.

1943—Allied armies drive Germany out of Africa, conquer Sicily and invade Italy; Russian counter offensive against Germany starts.

1944—President Roosevelt elected for the fourth term, full-fledged Allied offensive in Europe.

1945—Yalta Conference; San Francisco Conference; death of President Roosvelt; Germany surrenders unconditonally (May 7); Potsdom Conference on the future of Germany, British Labour Party wins in general elections; First Atom Bomb dropped at Hiroshima and Nagasaki; unconditional surrender by Japan and the end of Second World War

1947—"Marshal Plan" for Europe promulgated; United Nations Organisation votes for the partition of Palestine

1948—Burma becomes independent. Jewish State of Palestine; Truman elected U.S. President.

1949—Signing of North Atlantic Pact.

1950—Indonesia becomes a Republic; People's Republic proclaimed in China. War in Korea breaks out in August 1950 between the North and South Korea. U.N. intervenes to stop the North Koreans and beat them back mainly with the support of the U.S.A.

1951—Gen. MacArthur dismissed. Tories win British elections. Libya becomes free.

1952—Death of King George VI of England the accession of Queen Elizabeth II, the exile of King Farouk of Egypt on the successful 'coup' of Gen. Naguib; the election of Gen. Eisenhower as the President of the U. S. A.

1953—Death of Stalin; coronation of Queen Elizabeth II.

1954—Col. Nasser becomes President and Premier.

1955—Bandung Conference of Asian-African nations; Geneva 'Summit' conference; revolt in Argentina; Peron driven out.

1958—United Arab Republic proclaimed. King Faisal of Iraq assassinated and Iraq proclaimed a Republic. Launching of Earth satellites. Death of Pope Pius XIV.

1959—The Moon hit by the Russian rocket, photos of the other side of the moon taken by a space station.

1960—A U. 2 're-connaissance' plane flying at high altitude is brought down over Russia and its pilot is captured alive. Khruschev is enraged very much and calls for the summit conference. Khruschev attends the U.N. personally and demands re-organisation of U.N.; Belgian Congo is given independence and falls into chaos. U. N. intervenes. John F. Kennedy the youngest candidate is elected President of U. S. A.

1961—Premier Lumumba murdered; South Africa becomes Republic and leaves Cammonwealth; 14 Powers Conference in Geneva on Laos; uprising in Angola, Abortive invasion of Cuba by rebels; Death of U.N. Secretary General Mr. Hammars joild in plane crash in Congo; Nuclear tests resumed by Russia and U.S.A.; 50 Megaton bomb tested by Russia; Major Yuri Gagarin, Soviet Airman circles the earth at 25,000 miles per hour thus making man's first flight into space.

1962—17 Nation Disarmament Conference met at Geneva (14th March); U. S. A. sent two men into space; Russia launched two space-ships Vostok I and Vostok II simultaneously with Major Nikolayev and Lt. Col. Popovich 11th and 12th Aug. Agreement on west Irian. Cuban crisis resolved. China invades India (20th Oct.) and subsequent unilateral cease-fire (22nd Nov.).

1963—Coup d' etat in Iraq and Syria, formation of U. A. R. comprising Egypt, Syria and Iraq proclaimed. Russia sends the first woman Valentine Tareshikov into space. France vetoes Britain entry into the Common Market (14th Jan.).

President Kennedy is assassinated by Lee Oswald. Lyndon Johnson becomes the U. S. President. Zanzibar becomes independent (Dec. 10, 1963).

1964—U. S. A. launched 562-ton saturn ! Super rocket; coup d'etat in Gabon Republic; Army coup in Brazil; Gen. Umberto Costello became the new President; Tanganyike and Zanzibar merged to form a single sovereign State now known as 'Tanzania'; Nyasaland becomes independent, to be known as Malawi; The XVIII Olympic Games opened in Tokyo (Japan); Khruschev resigns as Prime Minister of U. S. S. R.; Mr. Alexei Kosygin becomes the new P. M.; Harold Wilson voted to Power; China explodes her first atomic bomb; Northern Rhodesia becomes independent and assumes the name of 'Zambia'; Johnson elected President of U.S.A. defeating Bary Goldwater (Republican); Kenya becomes Republic, Jomo Kenyatta elected President.

1965—Indonesia withdraws from U. N. O.; death of Sir Winston Churchil (Jan. 24); Gambia becomes independent; Dudley Senanayake appointed Ceylon Prime Minister; China explodes second atomic bomb; Military Coup in Algiers. Col. Houari Boumedienne seizes power.

1966—Dr. Soekarno of Indonesia is forced to step down in favour of Gen. Suharto (March); Labour party wins in U. K. General Elections (April); Guyana (formerly Br. Guiana) achieves independence. Indian Rupee devalued (June). Z. A. Bhutto, Pakistan's Foreign Minister resigns. Former Indonesian Foreign Minister Subandrio went on trial, accused of plotting with Indonesia's Communist Party and creating economic disorder and inflation; Found guilty and sentenced to death; U. Thant elected again to another five-year term as Secretary General of U. N. O. (Dec. 4, 1966).

1967—See 'Current Affairs.'

INDIAN HISTORY

B. C.

3000—(about) Pre-Áryan Civilization of Mohenjodaro.
2000-1530—Period of Vedic Civilization.
1900—First Aryan settlement of the Gangelic Plain.
1600-1000—The age of the Vedas.
800-500—The Upnishads.
563-413—Gautam Buddha.
540-468—Mahavira the founder of Jainism.
326—Alexander's Invasion.
322-298—Chandragupta Maurya.
305—Selucus Nicator defeated by Chandragupta Maurya.
272—Ashoka's accession.
58—Beginning of Vikrami Era.

A. D.

120—Kanishak, the Kushan King.
320-530—Gupta Era.
375—Chandragupta, Kalidas.
405-11—Fa Hien's travels in Gupta Empire.
448—First Hun invasion of India.
606-648—Harshavardhan.
633—Hieun Tsang arrives in India.
712—Arab invasion of Sind.
713—Yasovarman's Embassy to China.
750—Rise of Pallavas.
900—Rise of Chola Kingdom.
1008—First invasion of Mahmud Ghazni.
1192—Battle of Thanesar. Prithviraj defeated by Ghori.
1194—Jaichand, King of Kannauj, defeated by Qutad-ub-Din-
1206-1526—Sultanate of Delhi.
1335—Foundation of Vijayanagar.
1347—Foundation of Bahmni Kingdom in the Deccan.
1398—Timur's invasion.
1409—Birth of Guru Nanak, founder of Sikhism.
1494—Foundation of Agra by Sikandra Lodhi.
1498—Vasco de Gama discovered the sea-route to India.
1526—First Battle of Panipat. Babar defeated Hemu.
1556-1605—Akbar the Great.

1556—Second Battle of Panipat.
1600—Foundation of East India Company.
1628-58—Shah Jahan.
1632-55—Building of Taj Mahal at Agra.
1680—Death of Shivaji.
1690—Calcutta founded by the English.
1707—Death of Aurangzeb.
1723—Nadir Shah's invasion.
1757—Battle of Plassey.
1761—Third Battle of Panipat (end of French and Maratha power).
1765—Grant of Diwani of Bengal, Bihar and Orissa to East India Company.
1773—The Regulating Act was passed.
1774—Warren Hastings becomes first Governor-General.
1784—Pitt's India Act passed.
1793—Permanent Settlement of Bengal.
1828—Raja Ram Mohan Roy founded Brahmo Samaj.
1831—Macaulay's Minute on English Education.
1839—Death of Maharaja Ranjit Singh.
1853—First Railway opened in India.
1857—The Great uprising known as Sepoy Mutiny.
1857—Calcutta, Bombay and Madras Universities founded (June 24).
1858—The East India Company dissolved and the government of India taken over by British Crown.
1862—Indian Council Act, Indian High Courts Act and I.C.S. Act passed by Parliament.
1869—Birth of Mahatma Gandhi.
1875—Arya Samaj founded by Swami Dayanand.
1885—Indian National Congress founded (December 28).
1905—Partition of Bengal, rise of militant nationalism in India.
1912—Transfer of Government of India from Calcutta to Delhi.
1916—Lucknow pact.
1917—Declaration of Secretary of State promising responsible government to India.
1918—Montague-Chelmsford Reforms.
1919—Rowlatt Act passed; Massacre of Jallianwala Bagh.

1920—Inauguration of Non-Co-operation Movement by Mahatma Gandhi.
1920—Chauri-Chaura outrage, Gandhiji's conviction for six years.
1928—Visit of Simon Commission. Death of Lala Lajpat Rai by Lathi Blows.
1929—Independence Resolution at Lahore Congress.
1930—Civil disobedience movement by Congress. First session of the Round Table Conference in London.
1931—Gandhi-Irwin pact; Congress participation in R.T.C.
1932—Suppression of Congress, Gandhiji's fast against Communal Award—Poona pact.
1935—Govermment of India Act Passed.
1937—Provincial autonomy inaugurated; Congress takes over in seven provinces.
1939—Congress ministers resign in protest against British Govermment's declaration of India as a belligerent country without India's consent.
1940—Congress demands complete independence and prepare for struggle.
1942—Congress rejects Cripps proposals and launches the "Quit India" movement.
1944—Mahatma Gandhi releassed, Gandhi Jinnah Talks, Formation of the Indian National Army under Netaji Subhash Bose at Singapore.
1946—The I.N.A. Trials at Red Fort, Delhi.
1946—Visit of British Cabinet Delegation and the formation of the Interim Government at the Centre.
1947—India becomes independent on August 15, National Flag is adopted by the Constituent Assembly on July 12
1948—Assassination of Mahatma Gandhi (January 30) ; Last British troops leave India ; Integration of Indian States ; Military Action in Kashmir and Hyderabad.
1949—India decides to remain in the Commonwealth as a Sovereign, Independent Republic.
1950—India becomes a Sovereign Republic from January 26.
1951—Dr. Frank Graham appointed U.N.s Kashmir Mediator.
1952—Dr. Rajendra prasad re-elected President of the Union Dr. S. Radhakrishnan elected Vice-President; Congress re-elected to power by an overwhelming majority.

1954—Death of Mr. Kidwai

1955—Asian-African Countries Conference in New Delhi. Bandung Conference in which Pt. Nehru takes leading part. Marshal Bulganin and Mr. Khruschev, Russian leaders visit India.

1956—Dr. Frans Blucher Vice-chancellor of W. Germany visited India in January.

1958—Dr. Ho Chi-Minh visits India, as also King Zahir Shah of Afghanistan, and, Mr. Macmillan, P.M. of U.K. Death of Maulana Abul Kalam Azad. Visit to India of Mr.Diefenbaker, P.M. of Canada, Mr. Gerhardsen, P.M. of Norway. Visit to Japan President Rajendra Prassad, later on to Malaya and Indonesia.

1959—Mr. D. Eisenhower President of the U.S.A. visits India. The President takes over the administration of Communist State of Kerala. N. Sanjeeva Reddy is elected President of Congress. Panchet Hill Dam- one of the four dams of Damodar Valley Corporation is inaugurated.

1960—The President inaugurates the first blast furnace of Durgapur Steel Work, President of Russia visits India; Elections are held in Kerala by which the alliance of Congress, P.S.P. and Muslim League gets majority and forms a coalition Ministry; Khruschev visits India; Bombay State is divided into Maharashtra and Gujarat States; Naga State is agreed upon by the Government and Naga leaders; India's second atomic reactor is opened in Trombay; canal water dispute between India and Pakistan settled.

1961—Census; Nehru visited Russia and Europe; creation of Naga Land; inauguration of Rajasthan Canal; Third Plan Revealed; Queen Elizabeth visited India; Master Tara Singh's fast.

1962—Third General Elections in India, Congress emerged victorious; Nagaland created as the 16th State in India, de jure transfer of French possessions in India, China invades India (20th Oct.), unilateral cease-fire by China (21st Nov.).

1963—Gold Control Rules and Compulsory Deposit Scheme introduced. Dr. S. Radhakrishnan visits Afghanistan and Iran and later U.S.A. and Britain. Western powers promise more aid to India, Kamraj Plan accepted. Congress session at Jaipur. Kamraj Nadar elected Congress President. King of Jordan pays visit to India (3-12-1963). K.M. Pannikkar, noted educationist, historian and diplomat dies of heart attack (11th Dec. 1963). General Elections in Goa.

1964—G. M. Sadiq appointed Prime Minister of Jammu and Kashmir State (Feb.). Sheikh Abdullah released on April 8. Death of Jawahar Lal Nehru on 27th May. Lal Bahadur Shastri elected the new Prime Minister. Das Commission Report published. Pratap Singh Kairon, Panjab's Chief Minister indicted (June). Bakshi Ghulam Mohd. former Kashmir's Premier arrested under the D.I.R. (Sep.).

1965—Anti-Hindi agitation and riots in the South (Jan.). Pratap Singh Kairon, former Chief Minister of Panjab murdered (Feb. 6). Pakistan attacks Indian border-posts on Kutch-Sind border (April). Indians scale Everest for the 4th time (May 29). India and Pakistan sign an agreement for ceasefire in Kutch (June 30). Pakistan attacks India in Kashmir (August 6). Cease-fire (23rd Sep.).

1966—Lal Bahadur Shastri leaves for Tashkent (4th January). Tashkent agreement signed (between India and Pakistan) through the good offices of the U. S. S. R. Prime Minister, Allexie Kosygin (10th Jan.). Sh. Lal Bahadur Shastri dies of heart failure (10th Jan.). Dead body of the Indian Prime Minister flown to India. Allexie Kosygin accompanies the Indian leaders to India (Jan. 11). Shastri Ji cremated at Vijya Van near Rajghat (Jan. 12). Indira Gandhi elected the new Prime Minister. Gen. J. N. Choudhry Chief of Army Staff retires (June); P.P. Kumarmanglam becomes the new Chief of Army Staff (June). Rupee Devalued (June). Draft outline of the Fourth Plan approved. Student unrest throughout the country. Anti Cow-Slaughter demonstration (Nov.). India wins Gold Medal in Hockey in the 5th Asian games held in Bangkok.

1967—See 'Current Affairs'.

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BOOKS AND AUTHORS

SOME FAMOUS BOOKS AND THEIR AUTHORS

Adam Bede (Novel) : *George Eliott.*
Antony and Cleopatra: *W. Shakespeare.*
Arms and the Man : *Bernard Shaw.*
Ancient Mariner : *Coleridge.*
Anna Karenina : *Count Tolstoy.*
Autobiography of a Super Tram : *H. H. Davis.*
Alice in Wonderland : *Lewis Carrol.*
Aenied : *Virgil.*
A Mid-Summer Night's Dream : *W. Shakespeare.*
As You Like It : *W. Shakespeare.*
Advancement of Learning : *Francis Bacon.*
Aeropagitica : *John Milton.*
Alexander's Feast (Ode) : *John Dryden.*
An Elegy Written in a Country Churchyard (Poem) : *Thomas Gray.*
Adonais (Poem) : *Percy Bysshe Shelley.*
Ayesha : *Rider Haggard.*
Battle of the Books : *Jonathan Swift.*
Biographia Literaria : *Samuel Taylor Coleridge.*
Break, Break Break : *A Tennyson.*
Brothers Karamazov : *Dostoyesky.*
Blue Bird : *Materlink.*
Candida : *Voltaire.*
Childe Harold's Pilgrimage : *Lord Byron.*
Confessions of an English Opium Eater : *De Quincy.*
Crime and Punishment : *F. Dostoyevsky.*
Canterbury Tales : *Chaucer.*
Crown of Wild Olives : *John Ruskin.*
Cloiseter and Hearth : *Charles Seade.*
Done Quixote; : *Miguel de Cervantes.*
Divine Comedy : *Dante*
Don Juan : *Lord Byron.*
Dr. Jekyll and Mr. Hyde : *R.L.Stevenson.*

Dr. Zivago : *Boris Pasternak.*
Decline and Fall of the Roman Empire : *Gibbon.*
Deserted Village : *Oliver Goldsmith.*
David Copperfield : *C. Dickens.*
Eve of St. Agnes : *John Keats.*
Endymion (A Poetic Romance) : *John Keats.*
Essays of Elia : *Charles Lamb.*
Egoist : *George Meredith*
French Revolution : *Thomas Carlyle.*
Faerie Queene, The : *Edmund Spenser.*
Faust : *Goethe.*
Far From the Madding Crowd : *Thomas Hardy.*
For Whom the Bell Tolls : *E. Hemingway.*
Forsyte Saga : *John Galsworthy.*
Frankenstein : *Mary Shelley.*
Gulliver's Travels : *Jonathan Swift.*
Great Expectations : *Charles Dickens.*
Hamlet : *William Shakespeare.*
Henry Esmond : *Thackeray.*
Hunchback of Notre Dame : *Victor Hugo.*
Ivanhoe : *Sir Walter Scott.*
In Memoriam : *Lord Tennyson.*
Idylls of the King (Poem) : *Lord Tennyson.*
Ideal of a University : *Henry Newman.*
Illiad : *Homer.*
Jungle Book : *R. Kipling.*
Jane Eyre : *Charlotto Bronte.*
Julius Ceasar : *Shakespeare.*
Kidnapped : *R. L. Stevenson.*
Kim : *Rudyard Kipling.*
King Solomon's Mines : *Rider Haggard.*
Kubla Khan (A Vision) : *S. Coleridge.*
Lotus Eater : *A. Tennyson.*
Leviathen, The : *Thomas Hobbes.*
Le Misanthrop : *Moliere.*
Life of Nelson : *Robert Southey.*
La Belle Dame Sans Merci : *Keats.*
Les Miserable : *Victor Hugo.*
Life of Dr. Johnson : *James Boswell.*
Lord Jim : *Joseph Conrad.*

Macbeth : *Shakespeare.*
Morte'd Arthur : *Lord Tennyson.*
Man and Superman : *G. B. Shaw.*
Merchant of Venice The : *Shakespeare.*
Mother, The : *Maxim Gorky.*
Mac Flecknoe (Poem) : *John Dryden.*
Mill on the Floss : *George Eliot.*
Mayor of Casterbridge : *Thomas Hardy.*
Monte Cristo, Count of : *Alexandre Dumas.*
Notre Dame, Hunchback : *Victor Hugo.*
Newcomes : *W. M. Thackeray.*
Odyssey, The : *Homer.*
Old Wife's Tales : *A Bennett.*
Origin of Species : *Charles Darwin.*
Oliver Twist : *Charles Dickens.*
Old Man and the Sea : *Earnest Hemingsway.*
Ode on a Grecian Urn : *John Keats.*
Peter Pan : *Sir J. M. Barries.*
Paradise Lost : *Milton.*
Penguine Island : *Anatole France.*
Pride and Prejudice : *Jane Austin.*
Pilgrims Progress : *John Bunyan.*
Pamela : *Richardson.*
Prisoner of Chillon, The : *Byron.*
Promethous Unbound (Drama) *Shelley.*
Rubaiyat of Umar Khayym : *Edward Fitzgerald.*
Republic, The : *Plato.*
Robinson Crusoe *Defoe.*
Rape of the Lock (Satirical Poem) : *Pope.*
Religio Medici : *Sir Thomas Browne.*
Scarlet Letter, The : *Nathaniel Hawthrone.*
Social Contract : *Rousseau.*
She Stoops to Conquer : *Goldsmith.*
Silas Mariner : *G. Eliot.*
Seven Pillars of Wisdom : *T.E. Lawrence.*
She : *Rider Haggard.*
School for Scandal : *Sheridan.*
Sartor Resartus : *T. Carlyle.*
Seven Lamps of Architecture : *Ruskin.*
Stones of Venice : ***Ruskin.***

Sohrab and Rustam : *Mathew Arnold.*
Shape of Things to Come : *H. G. Wells.*
Talisman: *Sir Walter Scott.*
Tale of Two Cities: *Charles Dickens.*
Treasure Island: *Robert Louis Stevenson.*
Travels with a Donkey: *Robert Louis Stevenson.*
Three Musketeers: *A. Dumas.*
Tales of Mysteries and Imagination: *E. A. Poe.*
Through the Looking Glass: *Lewis Carrol.*
Tristam Shandy: *Lawrence Sterne.*
Ulysses: *A. Tennyson.*

Untold story: *B.M. Kaul*
Vicar of Wakefield: *Goldsmith.*
Vanity Fair: *W. M. Thackeray.*
War and Peace: *G. Tolstoy.*
Wealth of Nations : *Adam Smith.*
Wuthering Heights: *E. Bronte.*
Waverly Novels: *Sir Walter Scott.*
Zhivago, Dr.: *Boris Pasternak.*

GREATEST POETS OF DIFFERENT LITERATURES

English: Shakespeare.
French: Sully Prodhomme.
German: Goethe.
Greek:(Homer.
Italian: Dante.
Sanskrit: Kalidas.
Hindi: Tulsidas.
Persian: Saddi.
Urdu: Ghalib.
Bengali: Tagore.

FAMOUS INDIAN AUTHORS

Language	*Authors*
ASSAMESE :	Madhavkandali : Hem Chandra Goswami (Poet). Hem Chander Barua. (Novelist).
BENGALI :	Bibhuti Bhushan Bandopadhya, Bankim Chander Chatterji R C. Dutt, Sarat Chander Chatterji, Premendra Mitra (Novelists) Michael Madhusudan Datt, R. N. Tagore.
GUJARATI :	Narsing Mehta, Parmanand (Poets), Goverdhanram, K. M. Munshi. (Novelists)

HINDI : Tulsidas, Surdas, Bihari, Kabir, Guru Nanak, Jai Shankar Prasad, Maithilisharan Gupta (Poets). Harish Chandra is the father of modern Hindi prose. Munshi Prem Chand, Sudershan, Upendra Nath Ashk, Jainendra Kumar Jain. (Novelists)

KANNADA : Pampan (the first poet), Ranna, B. M. Shrikanta, Purandra Das.

MALAYALM : C. V. Raman Pillai, O. Chandu Menon Thakazhi, Siva Sankara Pillai (Novelists) Kumaran Asan, Vallathol (died in 1958), Narayana Menon. (Poets)

MARATHI : Hari Narayna Apte, Tikaram Mahay.

ORIYA : Radha Nath Roy, Gopalabandhudas. (Poets)

PANJABI : Bhai Vir Singh, Dhani Ram Chatrik, Amrita Pritam, Warris Shah (Poets). Nanak Singh (Novelist). Balwant Gargi (Dramatist).

SANSKRIT : Bana Bhatt, Kalidas, Bhartrihari, Kalhana (Poets).
Bhava Bhuti, Kalidas. (Dramatists)

TAMIL : Subramania Bhara ti. (Poet)
Ramalingam of Nanakkal.

TELUGU : Triputi, Lakshmi Narsimham. (Poets)

URDU : Mirza Ghalib, Mohd. Iqbal, Altaf Hussain Hali, Josh Maliabadi. (Poets)

SCIENTIFIC INVENTIONS & DISCOVERIES

DISCOVERIES & INVENTIONS IN CHEMISTRY

1766—Cavendish. Discovery of "Inflammable air" (hydrogen).
1774—Priestley. Discovery of Oxygen.
1783—Lavoisier- First quantitative synthesis of water.
1803—Dalton. Atomic theory ; laws of chemical combination.
1809—Gay Lussac. Laws of Gases.
1811—Avogadro. Molecular hypothesis.
1828—Wohler. Leibig. Synthesis of urea ; foundation of Organic Chemistry.
1841—Faraday. Induction of electric current.
1860—Bunsen, Kirchoff. Invention of the spectroscope.
1868—Loekyer. Discovery of helium in the sun by use of spectroscope.
1869—Mendeleef. Periodic table of elements, established families of elements.
1887—Arrhenius. Ionic theory of dissociation in solution.
1896—Becquerel. Radio activity of Uranium.
1891—Curie. Discovery of Radium.
1908—Onnes. (Kamerlingh, Liquefaction of Helium).
1912—Laue, Maxvon. Measurement of X-ray by use of crystals
1913—Moseley. Atomic numbers.
1922—Aston. Mass spectroscope for separation of isotopes.
1932—Urey. Discovery of deuterium.
1934—Juliot Curie. Artificial radio activity.

DISCOVERIES IN PHYSIOLOGY AND MEDICINE

1628—Harvey. Circulation of blood and function of the heart.
1665—Hook. Observation and naming of "cells".
1675—Leeuwenhock. Observation of bacteria by microscope.
1688—Redi. All life comes from life.
1737—Linnaeus. System for classifying plants and animals.
1761—Spallanzani. Disproved spontaneous generation.
1796—Jenner. Vaccination for small pox.
1819—Laenec. Invention of stethoscope.

1839—Schwann. All living matter composed of cells.
Long—First to use anaesthetic in surgery.
1859—Darwin. Evolution and theory of natural selection.
1865—Mandel. Laws of heredity.
1867—Lister. Antiseptic Surgery.
1882—Maschnicov. Function of white blood corpuscles discovered.
1882—Pasteur. Rabies preventive.
1882—Koch. Tuberculosis bacteria discovered.
1892—Weismann. Developed theory of germ plasm in heredity.
1894—Kitzaato. Discovery of bacilius of plague.
1894—Perfection of diphtheria antitoxin.
1897—Eljkman. Cause of beriberi, vitamin deficiency.
1900—Reed. Cause of yellow fever.
1900—De Vries. Nature of mutations and their role in heredity.
1901—Takamine. Isolation of adrenaline, first hormone isolate.
1905—Binet. Intelligence tests.
1906—Wassermann. et al. Test for syphilis.
1907—Shull. Development of hybrid corn.
1907—Willstatter. Constitution of Chlorophyll.
1908—Freud. Doctrine of psycho-analysis.
1909—Morgan. Theory of the gene and detailed mechanics of heredity.
1910—Pavlov. Mechanism of the conditioned reflex.
1912—Cushing. Relation of pituitary gland to growth.
1912—Ehrlich. Selvarsan.
1913—Goldbeger. Cause and control of pellagra.
1913—Sohick. Test of susceptibility to diphteria.
1913—McCollum. Isolation of vitamin A.
1922—Banting and McLeod. Insulin for treatment of diabetes.
1924—Teenbock. Production of vitamin by ultra-violet irradiation.
1926—Minet Whipped and Murphy. Liver treatment of anaemia.
1929—Eleming. Penicilin.
1948—Duggas. Aureomycin.
1955—Salk. Anti polio vaccine.

1932—Domogk. Sulfa drugs as bacteriacides.
1935—Stanley. Molecular nature of viruses.
1946—Du Vignsaud. Synthetic penicillin.

DISCOVERIES AND INVENTIONS IN PHYSICS

1637—Newton. Laws of gravity.
1785—Coulomb. Fundamental laws of electrical attraction.
1798—Thompson. (Baron Rumford). Mechanical theory of heat.
1815—Fresnal. Diffraction of light.
1840—Joule. Measurements of electric current.
1847—Helmholtz. Law of conservation of energy.
1873—Maxwell. Electromagnetic theory of light.
1896—Becquerel. Discovery of radio-activity.
1897—Wilson. Development of cloud chamber to direct sub-atomic particles.
1897—Thompson. Discovery of electrons.
1901—Planck. Quantum Theory.
1902—Michelson. Velocity of light.
1905—Einstein. Theory of relativity.
1911—Rutherford. Theory of atomic nucleus.
1913—Bohr. Electron theory.
1919—Aston. Mass spectra of isotopes.
1919—Rutherford. Proton.
1924—De Broglie. Wave nature of the electrons.
1925—Breit and Tuve. Radar.
1931—Lawrence. Invention of the cyclotron.
1932—Chapwick. Discovery of the neutrons.
1932—Andberson. Discovery of positron.
1934—Fermi. Use of slow neutrons in atom smashing.
1938—Hanh. Discovery of uranium fission.
1939—Zworykin. Electron microscope.
1941—Fermi. Atomic pile for generation of power.

MECHANICAL INVENTIONS AND DISCOVERIES

1657—Hygens. Pendulum clock.
1769—Watt. Steam engine patented.
1773—Montgoalfier. Hot air baloon.
1785—Cartwright. Powerloom.
1786—Reed. Machine-cut nails.

1793—Whitney. Cotton gin; mass production of interchangeable gun parts.
1797—Newbolt. Cast Iron plough.
1807—Fultan. First succesful steamboat.
1810—Appert. Food preservation by sterilization.
1816—Davy. Miner's safety lamp.
1829—Stephenson. First succesful steam railroad.
1830—Thimonnier. Sewing machine.
1833—McCormic. Reaper.
1835—Colt. Revolver.
1837—Ericsson. Screw Propeller.
1846—Howe. Sewing machine.
1852—Otis. Improved power elavator.
1858—Field. Succesful Atlantic cable.
1861—Gatling. Machinegun.
1868—Sholes, Gilder. Typewriter.
1869—Westinghouse. Airbracke for rail road.
1877—Edison. Phonograph.
1885—Dunlop. Pneumatic tyre.
1893—Edison. Motion pictures.
1897—Diesel. First successful heavy oil engine.
1900—Holt. Tractor, caterpillar.
1900—Von Zeppelin. Zeppeling.
1903—Wright Brothers. Aeroplane.
1905—Sperry. Gyro-compass.
1909—Breguet. Helicopter.
1911—Kettering. Self-starter automobile.
1914—Swintone. Mililary Tank.
1918—Browning. Rifle automatic.
1925—Heisenberg. Quantum Mechanics.
1930—Whittle. Jet propulsion.

SPACE EXPLORATION

Space First

World's First Spaceman : Maj. Yuri Gagarin (Russian) (launched on April 12, 1961 in Vostik I)

U.S.A.'s First Spaceman : Commander Allan Shepard. (He went only 115 miles up into space on May 5, 1961).

First Group-flight in space by men :	Maj. Nikolayev and Col. Popovich (Russian) in Vostok III and IV respectively on August 11-13,1962.)
First Group-flight in space by a man and a woman :	Lt. Col. Bykovsky and Valentina Tereshkova (Russians) in Vostok V and VI respectively on June 14-19, 1963.
Word's First Space-woman :	Valentina Tereshkova (Russian) (launched in Vostok VI on June 16, 1963).
World's First "Passenger" Spaceship--The first spaceship to carry more than one person :	VOSKHOD-I (Sunrise-I)--U.S.S.R. (launched on Oct. 12, 1964).
First person to float in space :	Lt. Col. Leonov (Russian) 65. in Voskhod II--March 18, 19
First person to make two space flights :	Gordon Cooper (U.S.A.) 15-16, 1963 and August 21, 1965.
First Space Rocket to hit the Moon :	LUNIK-II (U.S.S.R.).
First Space Rendezvous :	Gemini VI and Gemini-VII (U.S.A.) spacecrafts rendezvoused in history's first space meeting on Dic. 15, 1965.
First Spaceship to achieve soft-landing on the Moon :	LUNA-9 (U. S. S. R) on Feb. 3, 1966.
First man-made satellite of the Moon :	LUNA-10 (U.S.S.R.) March 31, 1966.
	LUNA-13 (U. S. S. R.) Dec. 1966.

MANNED SPACE-FLIGHT CALENDAR

U. S. S. R.

1961

April 12—Major Yuri Gagarin (Vostok-I)—one orbit.

Aug. 6—Major Gherman Titov (Vostok-II)—17 orbits.

1962

Aug. 11—Major Andrian Nikolayev (Vostok-III)—64 orbits.

Aug. 12—Col. Pavel Popovich (Vostok-IV)—48 orbits.

1963

June 14—Lt. Col. Valery Bykovsky (Vostok-V)—82 orbits.

June 16—Valentîna Tereshkova (Vostok-VI)—49 oroits.

1964

Oct. 12—Col. Vladimir Komarov (pilot), Dr. Boris Yegorov (doctor) and Koestantin Feoktistov (scientist) in Voskhod-1 *(first spaceship to carry more than one person)*.

1965

March 18—Col. Pavel Balyayev aud Alexei Leonov (Voskhad-II). *(Leonov is the first person to float tn space)*,

U. S. A.

1961

May 5—Commander Allan Shepard. He went up only 115 miles in space (no arbit)

1962

Feb. 20—Lt. Col. John H. Glenn—3 orbits.

May 24—Lt. Commander Malcolum Scotcot Carpenter—3 orbits.

Oct.3—Commander Walter Schirra—7 orbits.

1963

May 15—Maj, Leory Gordon Cooper—22 orbits.

1965

March 23—Maj. Virgil Grissom and Lt. Cdr. Young (Gemini-III).

June 7—Major James A. Mcdivitt and Edward White (Gemini-IV). *(Edward White is the second man to swim in space)*.

Aug. 22—Gordon Cooper and Charles Conard (Gemini-V).

Dec. 4—Frank Borman and James Lovell (Gemini-VII).

Dec. 14—Walter M. Schirra and Thomas Stafford ·Gemini-VI). *(Gemini VI and VII rendezvoused in space)*.

1966

March 16—Neil Armstrong and David Scott (Gemini-VIII.)

June 5—Thomas Stafford and Eugene Cernan in Gemini—9. Cernan achieved a record space "walk" of 2 hours 5 mts.

1967 : See Current Affairs

MODERN AERIAL WARFARE

Aeroplanes:

A-3 Sky Warrior: U. S. Jet-bomber.

A-4 Skyhawk: U. S. Jet-bomber.

Antony-22: It is a giant Soviet transport plane capable of carrying 720 passengers.

Avro 748-Subroto; It is an Indian Turbo-jet passenger aircraft manufactured at Kanpur. It has been named after the late Air Marshal Subroto Mukerjee, first Indian Chief of Air-staff.

B-52: U. S. jet-bomber being used in the Vietnam War.

B-58; Hustler supersonic bomber: U. S. jet-bomber in use in Vietnam.

F-104 Starfighter; Heavy U. S. jet-bomber.

F. 105 Thunderchief; Heavy U. S. jet-bomber.

F-111 A; The F-111 A Swingwing Bomber is an American-built aircraft capable of carrying nuclear weapons and having STOL (short take-off and landing) characteristics. It can operate at low heights from short unprepared strips.

OX-142A—A Vertical Plane: The U. S. A. has manufactured a transport plane capable of taking off and landing vertically. It is called CX-142 A. It can carry 8,000 pounds of cargo or 32 people, and fly at a speed of 430 MPH.

HF-24 (Marut): It is a proto-type supersonic jet fighter plane being manufactured by Hindustan Aircraft, Bangalore.

HJT-16; It is a versatile jet trainer aircraft which will replace HT-2, Vampire and Harvard aircrafts on which I. A. F. personnel were earlier trained. It is being manufactured on a commercial scale by Aeronautics India Ltd. which incorporates Hindustan Aircraft Ltd.

MIG-21 and MIG.23: These are Russian jet fighter aircrafts of high speed for defence purposes. Mig-23 is the latest.

TSR-2; A British bomber which can fly at an exceptionally low level or an aeroplane at a speed of 1400 m. p. h.

VF-12 A: Mr. Kelly Johnson, Vice President of the Lockheed Aircraft Corporation, who designed the U-2 spy plane for the U. S. A. has designed VF-12 A, a jet intercepter aircraft, capable for flying at 2000 m.p.h.—a world record in flying speed.

(Also Refer **Chapter** on Defence Forces of India)

INSTITUTE OF EDUCATION FOR WOMEN
Dept. of Extension
SERVICE.
CALCUTTA-27

SCIENTIFIC RESEARCH IN INDIA

Before independence India had not organised scientific research programme except for the research departments of a few universities and the research units of a few industries. After independence, however, scientific and technological research was given great priority by the Govt. The policy of the Govt. in this connection is (i) to promote and encourage scientific research in India (ii) to train and encourage personnel able to carry out original scientific research (iii) to aid with funds the scientific research institutes in India (iv) that all universities should have research departments.

Council of Scientfic and Industrial Research.

Scientific research undearch under state patnonage is carried out through Conucil of Scientific and Industrial Research in India. The various research laboratories are aided and controlled dy this insitiute.

National Laboratories.

Since independence many research laboratories and institutes have been set up.

Nuclear Research.

. . The department of Atomic Energy controls and formulates policies regarding atomic research in India. Atomic Energy Establishment Trombay and the Atomic Minerals Division carry out the scientific and technical work of the Department. About 2000 scientists and tecnicians work at Trombay, near Bombay. There are at present two reactors in operation; "Apsara", a megawatt pool type reactor has been working since 1956 and megawatt "Canada India Reactor". To fuel these establishments there is a plant to produce nuclear of grade uranium and for converting the uranium into kinds of fuel elements. A plant was set up to reprocess the heavy water used as moderator in the "Canada India Reactor".

SCIENTIFIC RESEARCH INSTITUTES AND TRAINING CENTRES

1.	Indian Institute of Sciences	...Bangalore
2.	Tata Institute of Fundamental Research	...Bombay
3.	The Indian Institute of Nuclear Physics	...Calcutta
4.	Bose Research Institute	...Calcutta
5.	Birbal Sahni Institute of Palaeobotany	...Lucknow
6.	Shri Ram Institute for Industrial Research	...Delhi
7.	Forest Research Institute	...Dehra Dun
8.	Indian Agricultural Research Institute	...New Delhi
9.	Indian Dairy Research Institute	...Bangalore
10.	Sugar Research Institute	...Coimbatore
11.	Central Rice Research Institute	...Cuttack
12.	Central Jute Technological Research Laboratory	...Calcutta
13.	Central Tobacoo Research Station	...Rajahmundry
14.	Central Inland Fisheries Research Station	...Barrackpore (W. Bengal)
15.	Central Marine Research Station	...Madras
16.	Indian Institute of Sugar Technology	...Kanpur
17.	Meteorological Observatory	...Poona & Delhi
18.	Solar Physics Observatory	...Kodaikanal (Madras)
19.	Indian Institute of Technology	...Kharagpur, Kanpur, Madras, Bombay, New Delhi
20.	Indian Lac Research Institute	...Ranchi (Bihar)
21.	Atomic Energy Research Institute	...Bombay
22.	Indian School of Mines	...Dhanbad
23.	National Defence Academy	...Khadakvasla
24.	Indian Military Academy	...Dehra Dun
25.	Air Force Flying College	...Jodhpur
26.	National Gallery of Modern Art	...New Delhi
27.	National Archives of India	...New Delhi
28.	National Library	...Calcutta

29.	Central Mechanical Engineering Research Institute	...Durgapur
30.	Central Public Health Engineering Research Institute	...Nagpur
31.	Central Indian Medicinal Plants Organisation	...New Delhi
32.	Central Scientific Instruments Organisation	...New Delhi
33.	Indian Institute of Petroleum	...Dehra Dun
34.	Central Board of Geophysics	...Hyderabad
35.	Visvesvaraya Industrial and Technological Institute	...Bangalore

MEDICAL RESEARCH INSTITUTES

Central Drug Laboratory	...Calcutta
All-India Institute of Hygiene and Public Health Calcutta	
Haffkine Institute	...Bombay
Central Research Institute	...Kasauli (Simla Hills)
All-India Malaria Institute	...Delhi
Veterinary Research Institute	...Mukteswar
Nutrition Research Laboratories	...Coonoor
Tuberculosis Institute	...Delhi

GOVERNMENT INDUSTRIAL UNDERTAKINGS

1.	Hindustan Machine Tools Ltd.	...Jalahalli, Hyderabad, Panjore
2.	Hindustan Cables Ltd.	...Rupnarainpur (W. Bengal)
3.	Bharat Electronics Ltd.	...Jalahalli
4.	Indian Locomotive Workshop	...Chittaranjan (W. Bengal)
5.	D. D. T. Factory	...Delhi
6.	Hindustan Aircraft Factory	...Bangalore
7.	Hindustan Housing Factory	...Delhi
8.	Hindustan Shipyards Ltd.	...Visakhapatnam
9.	Hindustan Antibiotics (*Penicillin Factory*)	...Pimpri (Poona)

10.	Heavy Electricals	...Bhopal, Ranchi
11.	Uranium Thorium Factory at Trombay Island (near Bombay).	
12.	Nangal Fertilizer Factory	...Nangal Township (Punjab)
13.	Sindri Fertilizer Factory	...Sindri (Bihar)
14.	Nahan Foundry Ltd.	...Nahan (Himachal Pradesh)
15.	Rare Earths Factory	...Alwaye (Kerala)
16.	National Instruments Factory	...Jadavpur (Cal.)
17.	Machine Tools Prototype Factory	...Ambarnath
18.	Indian Telephone Industries Ltd.	...Bangalore (Maharashtra)
19.	Integral Coach Factory	...Perambur (Madras)

Oil Refineries

Public Sector Refineries : Barauni (Bihar), Nunmati (Gauhati), Koyli (Gujarat).

Private Sector Oil Refineries : Three big Oil Refineries have been established in India in the Private Sector :—

(i) ESSO Refinery at Trombay (near Bomday).
(ii) Burmah Shell Refinery at Bombay.
(iii) Caltex Refinery at Visakhapatnam (Andhra Pradesh).

New Steel Plants

Three gigantic Steel Plants have been set up in Public Sector :—

1. *At Bhilai* (Madhya Pradesh) : with the help of Russian engineers.
2. *At Rourkela* (Orissa) : with the help of German engineers
3. A fourth steel plant is being set up at Bokaro (Bihar).
4. *At Durgapur* (West Bengal) : with the help of British engineers.
5. A fifth steel plant is proposed to be set up at Visakhapatnam.

Important to Remember

Rocket Launching Station (India)	...Thumba (near Trivandrum)
Atomic Power plants	...1. Tarapur (near Bombay) 2. Rana Partap-Sagar (Rajsthan) 3. Kalpakkam near Mahabalipuram (Madras)
Atomic Reactors : (i) "Apsara" (ii) "Canada-India" (iii) "Zerlina"	...Trombay (Bombay)
High-altitude Cosmic Ray Laboratory	...Gulmarg (Kashmir)
Atomic Energy Research Institute	...Bombay
Artificial Limb Centre	...Poona
Agricultual University (Rural)	...Rudarpur
Currency Printing Press	...Nasik
Central Arid Zone Research Institute	...Jodhpur
College of Military Engineering	...Kirkee (Poona)
Central Sanskrit Institute	...Tirupati (Andhra)
Defence Services Staff College	...Wellington (Madras)
Heavy Electricals	...Bhopal, Ranchi
Defence Science Laboratory	...Dehra Dun, Coimbatore, Delhi
Hindustan Machine Tools	...1. Jalahalli (B'lore) (*Two Factories*) 2. Pinjore (near Chandigarh) 3. Hyderabad
Institute of Nuclear Physics	...Calcutta
Indian Cancer Research Station	...Bombay
Lignite Factory	...Neyveli (Madras)
Scientific Precision Instruments Institute	...Chandigarh
Fertilizer Factories	...1. Sindri (Bihar) 2. Nangal (Punjab) 3. Neyveli (Madras) 4. Roarukel (Orissa)

Steel Plants *Public Sector*	...1. Bhilai (M.P.) 2. Rourkela (Orissa) 3. Durgapur (West Bengal) 4. Bokaro (Bihar) 5. Mysore Iron & Steel Works, Bhadravati
Steel Plants in *Private Sector*	...1. The Indian Iron & Steel Company has its two plants at Burnpur and Kulti (West Bengal) 2. Tata Iron & Steel Company Ltd. Jamsehdpur (Bihar)
Central Salt and Marine Chemicals Research Institute	...Bhavnagar
National Geophysical Research Institute	...Hyderabad
Visvesvaraya Industrial and Technological Museum	...Bangalore
Hindustan Teleprinter Factory	...Madras
Himalayan Mountaineering Institute	...Darjeeling
School of Tropical Medicine	...Calcutta

National Laboratories in India

1.	National Physical Laboratory	...New Delhi
2.	National Chemical Laboratory	...Poona
3.	National Aeronautical Laboratory	...Bangalore
4.	National Metallurgical Laboratory	...Jamshedpur
5.	Central Road Research Institute	...New Delhi
6.	Central Fuel Research Institute	...Jealgora (Bihar)
7.	Central Glass and Ceramic Research Institute	...Jadavpur (Cal).
8.	Central Drug Research Institute	...Lucknow
9.	Central Leather Research Institute	...Mysore

10. Central Food Technolgical Research Institute ...Mysore
11. Central Buliding Research Institute ...Roorkee
12. Central Electronics Engineering Institute ...Pilani
13. Central Salt Research Institute ...Bhavnagar
14. Central Mining Research Station ...Dhanbad
15. Central Electro-Chemical Research Institute ...Karaikudi (Madras)
16. National Botanical Garden ...Lucknow
17. Regional Research Laboratory ...Hyderabad
18. Indian Institute for Biochemistry and Experimental Medicine ...Calcutta
19. Regional Research Laboratory ...Jorhat
20. Regional Research Laboratory ...Jammu (Tawi)
21. Birla Industrial and Technological Museum. ...Calcutta

SCIENCE

Some Important Facts, Phenomena and Properties :—

Hard Water. Hard water does not form lather with soap with ease. This is because of the presence of sulphates and chlorides of magnesium and calcium. These form insoluble compounds with soap.

Distilled Water. Water is freed from chemical impurities and salts by boiling it and collecting the steam in condensers. The water thus collected after cooling it is called distilled water.

Flask. Known as Dewar's or thermos flask. Anything kept in this flask maintains its temperature for a long time. it is a double walled container, the inner surface of the outer vessel and the outer surface of the inner is silvered. There is a vacuum (absence of any air) which prevents loss of temperature.

Cooling of Water. Water kept in an earthen pot keeps cool because of continuous evaporation of water through the pores of the pitcher.

Refrigeration. Whenever a liquid evaporates, it gathers heat from its environs. It thus produces a cooling effect. This principle is used in refrigerators where liquid amonia passes through a mass of pipes surrounding the container. Liquid amonia evaporates on reducing the pressure. The evaporated amonia is again liquified by the change of pressure. In this way, the cycle moves on.

Ice. Although ice is also composed of water, it keeps floating on water. This is because the specific gravity of ice is lesser than water. Ice will be submerged in alcohol as the specific gravity of alcohol is lesser than that of ice.

Lunar Eclipse. Lunar eclipse is simple scientific phenomena caused by the shadow of earth falling on the moon. It happens when the moon, the earth and the sun happen to be in a line. The earth coming in between the moon and the sun shuts off light thus causing the eclipse.

Ships. Ships float on water as it is so designed that the total weight of water displaced by it is greater than the ship itself. The vessel, therefore, floats by the upward thrust of water.

Jet engine. This type of engine is of recent development. The engine rejects high velocity gases. In a jet engine, there are rotary compressors and a gas turbine. The gas turbine drives the compressor. The aircraft moves because of the reaction of the air. A jet propelled engine uses crude petroleum and is more economical and can acquire higher speed.

Rocket. A rocket is used for quick and very high speed. It does not depend upon the presence of air and is thus useful in space communication. Special rocket fuels are used which when fired produce the required thrust after explosion.

Electric iron. It works on the principle that resistance to the flow of electric current produces heat. The electric iron has heating elements inside it which keeps the iron heated. Mica sheets are used to insulate the electric current and to make the iron shock proof.

Filling of fountain pen. Ink is filled in a fountain pen on the principle of difference of pressure. When the ink filler is pressed, it pushes out of itself all air and creates some vacuum. As the filler is relaxed the ink is forced into it because of atmospheric pressure above the surface of ink.

Rainbow. The ordinary white light (sun rays) is composed of seven colours, violet, indigo, blue, green, yellow, orange and red. These colours get split up when the sun ray is passed through a prism or through particles of water. That is why after rainfall we find rainbows opposite the sun.

Vitamins. Vitamins are found in food. The absence of vitamins makes one susceptbile to diseases by creating deficiencies. There are various types of Vitamins—A, B, C, D and E. Vitamin B is required for the development of human body.

Electric bulb. An electric bulb gives light, because of the principle that when the metal is heated it becomes red hot and then white hot. At that stage, it starts giving light. An electric bulb the filament of which is generally of tungston having high melting point gives light when current is allowed to heat it. The bulb has inert gas inside it.

Thermometers. Thermometer is an instrument to measure the heat of any substance. To measure our bodily heat, a clinical thermometer is used. It has marks from 95 degree F to 110 degree F. The normal body temperature is 98.4 degree F. There are other types of thermometers having markings on centigrade and roamer scales. The centigrade and Fahrenheight scales are widely used. In the centigrade scale, water freezes at 0 degree and boils at 100 degrees. Whereas in fahrenheight scale the freezing point is 32 degrees and boiling point is at 212.

Radar. This device is used for locating air craft. Radar means Radio, Angle, Direction and Range. When surveying a required area, wireless waves are released in the shape of concentrated beam. An aircraft entering that particular area intercepts the waves and an echo is reflected back to the transmitting station. The radar screen interprets it by black dots. By this device the distance as well as the exact location of the approching aircraft can be found out.

Atomic Fission. An atom is the smallest unit of an element. When it is subdivided, the chemical properties of it disappear as every atom is made up of the same sort of particle namely proton, electron and neutron. Certain elements of high atomic weight are radio-active. The nuclie of the atoms of these substances are unstable and disintegrate themselves by shooting of alpha particles, beta particles and gama waves at a very high speed.

Because of this, uranium gradually changes into radium and finally into lead taking millions of years.

Atomic fission lakes place when the nuclie of uranium 235 is bomdarded with neutrons. By this process, each nucleus gets splitted up into two fragments. At every fission, more neutrons are released and the process once started creates chain reaction which ultimately results in a terrific release of energy. The principle has been used in devising an atomic bomb.

Isotopes. Artificial radio-activity can be produced in a nuclear reactor. This can be made of any element. Once charged they transmit radio-activity and can be used in medicine, industry and agricultuaral research.

DISCOVERERS OR INVENTORS

Laws, discovery, invention etc. etc.	*Inventor or Scientist*
1. The three basic laws of motion	Kepler
2. Law of electrolysis	Michael Faraday
3. Vacuum above a mercury column in a barometer	Torricelli
4. The laws of universal gravitation	Sir Isaac Newton
5. White light is made up of seven different colours	Sir Isaac Newton
6. The combution is due to combination of the burning substance with oxygen and not any fiery substance like the supposed philogistin	Lavoiser
7. That the 9th and outermost planet in the solar system is Pluto	W. Jombaugh
8. Penicillin	Sir Alexander Fleming
9. X-ray	Wilhelm Roentgen

10. The treatment of syphlis	...Paul Ehrlich
11. Telephone	...Alexandar Grahm Bell
12 The first practical demonstration of actual television	...J. L. Baird
13. That the volume of a gas varies inversely with its pressure	...Robert Boyle
14. Discovery of radium	...Madame Curie
15. The circulation of blood	...William Harvey
16. Practical wireless	...Marconi
17. Discovery of aniline in coal tar and aniline dyes	...Hofmann
18. That lightning is nothing but electricity	...Benjamin Franklin
19. Pneumatic tyre	...Dunlop
20. The phonograph	...Edison
21. Telegraph or the method of electrical signalling	...Morse
22. Miner's safety lamp	...Davy
23. The Stethoscope	...Laennec
24. Vulcanized Rubber	...Goodyear
25. First succesful engine	...Stephenson
26. Sewing Machine	...Howe
27. Production of Steel	...Bessemer
28. Motion Picture	...Edison
29. The airplane	...Wright Brothers
30. The discovery of oxygen	...Joseph Priestley
31. The law of combing volume or that volumes of gases that interact to give gaseous products are in ratio of small whole numbers to each other and each has similar relations to volume of product	...Gay-Lussac

66. The system of writing, printing and Musical notation for the blind	...Louis Braille
67. The theory of electolytic dislocation	...Aarhenius
68. Prevention and cure of diptheria	...Behring
69. Used the method of grafting to produce new varieties of fruits and vegetables	...Burbank
70. Invention of the Centigrade thermometer	...Anders Celsius
71. Insulin	...Banting
72. Who formulated the law that the rate diffusion of a gas is inversely proportional to the square root of density	...Thomas Graham
73. The Vacuum pump	...Guericke
74. The first electro-magnetic motor	...Joseph Henry
75. Laid the foundation of the radio waves	...Hertz
76. The rotary press	...Hoe
77. The law of conservation of energy	...Joule
78. The triod	...Le de Forrest
79. Cure for yellow fever	...Hideyo Noguchi
80. A wire carrying a direct current causes a magnetic needle to take a position right angle to the wire	...Oersted
81. The statement that the strength of an electric current is equal to the electromotive force divided by the resistance of the conductor	...Ohm
82. That enclosed fluids transmit pressure equally in all directions	...Pascal
83. The Quantum Theory	...Max Planck
84. The first to measure the velocity of light by a study of the eclipses of Jupiters' satellites	...Roemer

85 That heat is a form of energy	...Rumford
86 That all life begins from a single cell	...Schwaan
87. Streptomycin	...Selman a Waksman
88. The laws of refraction of light	...Snell
89. The Sextant	...Thomas Godfrey
90. That friction produces heat	...Tyndall
91. The cell which is ihe practical unit of electromotive force(Voltic cell)	...Volta
92. The instrument that takes readings on a graduated scale to a fraction of a division	...Vernier
93. Grafting of animal glands on the human body	...Serge Vernoff
94. The modern steam engine	...Watt
95. The cloud chamber	...Wilson
96. Synthesis of D. D. T.	...Paul Muller
97. Atom bomb	British and American scientists
98. Nylon	...Wallace Hume Carothers
99. Submarine	...Holland
100. Discovery of Radio activity in Uranium	...Antonie Henry
101. The liquifacation of Helium	...Kamerlingh
102. Arrangement of chemical elements according to atomic numbers	...Moseley
103. The first to see porotozoa and bacteria	...Leenwenhock
104. That all life springs only from life and disproved the theory of spontaneous generation	...Redi Francesco

105. The germ plasm theory of heredity ...Chaim Weizmann

106. The discovery of the bacterium that causes plague ...Kitasato

107. That the disease beri beri is due to the deficiency of the Vitamin B ...Eijkman

108. Intelligence tests ...Benet

109. The cause of the yellow fever ...Walter Reed

110. Researches on pituitary gland and its relation to growth ...Harvey Cushing

111. That the force of attraction or repulsion between two electric charges is inversely proportional to the square of their distance and is directly proportional to their product ...Coulomb

112. Electro magnetic theory of light ...Maxwell

113. The discovery of electrodes ...Thomson

114. The discovery of the alpha, beta and gama rays emitted by radio active salts ...Lord Rutherford

115. The electron theory of atomic structure ...Bohr

116. Invention of the cyclotron for the production of high energy ...Lawrence

117. Discovery of the neutron ...Chadwick

118. Discovery of the position ...Anderson

119. Discovery of the Cathode rays ...Crookes

120. Electric transformer ...Stanley

121. The laws of practical calculation method for alternating current ...Steinmitz

122. Manufacturing of washing soda from common salt ...Earnest Solvay

123. Manufacture of ammonia by electrolytic action ...Hall

124.	Commercial synthesis of ammonia by the direct combination of nitrogen and hydrogen (Haber process)	...Haber
125.	The first European to print from movable type	...Gutenberg
126.	Steam boat	...Fitch
127.	The revolver	...Mc Colt
128.	The first to use general anesthetics specially chloroform	...Sir J. Y. Simpson
129.	Ether as an anesthetic	...Long(Crawford Williamson Long)
130.	Electrons	...J. J. Thomson
131.	The machine-gun	...Gatling
132.	Fountain pen	...Waterman
133.	Typewriter	...Glidden Sholes
134.	Linotype	...Mergenthaler
135.	The Kodak Camera	...Eastman
136.	Rare gases	...Raleigh and Sir William Ramsay
137.	Oxygen	...Joseph Priestley
138.	Chlorine	...Scheel
139.	Hydrogen	...Cavendish
140.	Television	...Baird
141.	Logarithm	...Baron Napier
142.	Intelligence tests	...Binet
143.	Research in Botany	...Birbal Sahni
144.	Nylon Plastics	...Carothers
145.	'Raman effect' on Polarisation of light and theorics on crystals and diamond formations	...C. V. Raman
146.	Discovered the Planet uranus	...Herschel Williams
147.	Film and Photographic goods	...Kodak

148. Wirless, Telegraphy radio	...Marconi
149. Laws of Heredity	...Mandel
150. Research in Atomic theory	...Oppen Heimer
151. Effect of Pressure or Radiation through bodies	...Meghnad Saha
152. Celluloid	...Parkes
153. 'Mauvedye'	...Perkin
154. Founded the Pitman system of shorthand	...Pitman
155. Quantum theory	...Planck
156. Atomic research	...Rutherford
157. Paints	...Shalimar
158. Discovery of a group of nuclear particles named after him 'Boson'	...S. N. Bose
159. Discovery of Neon gas	...Travers

PIONEERS IN MECHANICAL INVENTIONS AND DISCOVERIES

Austin—Motor Car.
Berliner—Microphone.
Brequet—Helicopter.
Bushwell—Submarine.
Caxton—Printing Press.
Coll—Revolver.
Daiemler—Gas engine.
Davy—Miner's Safety Lamp.
Diesel—Internal Combustion engine (Diesel engine).
Dunlop—Pneumatic tyre.
Edison—First electric bulb and gramophone.
Faraday—Dynamo.
Fick—Law of diffusion—*Fick's Law.*
Frank Whittle—Jet propulsion.
Fulton—Steam boat.
Galileo—Telescope.
Gathing—Machine Gun.

Gillette—Safety razor.
Graham Bell—Telephone.
Guttenberg—Art of printing.
Hoe—Rotary Printing Press.
Howe—Sewing Machine.
Huygens—Pendulum clock.
James Watt—Steam engine (patented in 1769)
Macmillan—Bicycle (1842).
Mauser--Magazine of rifle.
Mercator—Celestial and a terrestrial globe.
Mergenthaler—Linotype.
Montgolfier—Balloon (1883).
Pascal—Calculating Machine.
Robert Watson Watt—Radar.
Shockley—Transistor.
Sholes—Typewriter.
Stephenson—Railway engine.
Swinton—Military tank.
Torricelli—Barometer.
W. & O. Wright—(Wright Brothers) Aeroplane (1903).
Waterman—Fountain pen.
Zeiss—Lenses; Camera.

INSTITUTE OF EDUCATION FOR WOMEN
Dept. of Extension
SERVICE.
CALCUTTA-27

SPORTS AND GAMES

Trophies	*Associated with*
Aga Khan Cup	Hockey
America Cup	Yacht racing
Bleviot Cup	Aeroplane competition
Blue Riband	Steamship races
Calcutta Cup	Horse racing
Davis Cup	Lawn Tennis
Dr.Rajendra Prasad Cup	Tennis
Epson	Horse racing in London
F. A. Cup	Football
Hansraj Thakkar Silver Belt	Boxing
Radha Kishen Cup	Racing
I. F. A. Shield	Football
Prince of Wales Cup	Golf
Rovers Cup	Football
Ryder Cup	Golf
Subhash Memorial Cup	Soccer

Trophies	*Associated with*
The Ashes	Cricket
The Ranji Trophy	Cricket
Jawaharlal Challenge Trophy	1124 miles National Air race of India inaugurated in 1951
The Durand Challenge Cup	Football
The Report Challenge Cup	Football
The Schneidar Trophy	Seaplane competition
The Brighton Cup	Hockey
The Oval	Cricket
The King's Cup	Air
Walker Cup	Gold
Santosh Memorial Trophy	Football
Winchester Cup	Polo
Wightman Cup	Tennis

The Blue Riband : A handsome challenge cup donated jointly by the three Defence Services. It is open to India-bred horses of 3 and 4 years of age.

PLACES ASSOCIATED WITH WELL-KNOWN GAMES

Boxing ; Yankee Stadium and Madison Square Garden, New York.

Lawn Tennis ; Wimbledon in England, Forest Hills in U.S.A.
Shooting ; Bisley

Rugby Football ; Blackheath, London.

Hurlington,Renellagh, Rothampton,all S. W. of London.
Football ; Brookland, also Calcutta.
Derby ; Epsom.

Cricket ; Lord's (England), Brabourne Stadium (Bombay). Carlton (near Melbourne, Australia), Ferozshah Kotla Ground (Delhi).

SOME IMPORTANT TERMS USED IN GAMES

A Cannons; A stroke in billiards in which the player hits both the red and his opponent's ball.

A Duck : In cricket, the zero which records in a scoring sheet that a player has made no runs.

A Half Nelson : A hold during wrestling.

Ashes : The cricket trophy theoretically held by the winning team in any series of Test matches between England and Australia.

Bowling : Throwing the ball in cricket.

Bully : In the game of hockey the opening of the game, the two opposing players each striking the ground on his own side of the ball and opponent's slick alternately three times and then trying to strike the ball.

Crease : In cricket a line indicating the boundaries of a particular space, as the position of a batsman and a bowler.

Chukker : Composite contest consisting of road jump, high jump, discus throw, short put, javelin throw, pole vault, 100 meter and 1500 meter flat races, 110 meter hurdle race.

Dence : A term used in lawn tennis denoting that each side has gained three points.

Dribble : In the game of football to kick forward the ball little by little.

Drive : To send away with force, a ball in cricket, golf or tennis.

Gambit : It is a mode of opening game of chess by sacrificing a pawn early in the game for the purpose of making powerful attack.

Googly : A kind of bowling in cricket.

Links : A stretch of flat or gently undulating ground on which the game of golf is played.

Love : It means no point gained in billiards, or tennis or the volleyball or other games.

Mallet : The long handled hammer for drivihg the balls in croquet.

Pot : A prize won in a game.

Revoke : In the game of cards to neglect to follow suit.

Rubber : Term used to denote a contest to win two out of three games or three out of five—also deciding the game therein.

Second out : Term used for rounds during boxing.

Slam (grand) : In a game the winning of every trick.

Slam (little) : The winning of every trick but one in the game of bridge.

Slips : The part of the cricket field occupied by short slip and long slip.

Stymied : When a player's ball lies between his opponent's ball and hole and thus blocks the line of play.

Try : In rugby football, the score of three points gained by a player who succeeds in placing the ball with his hand over the enemy's line.

Vulnerable : Term used in bridge, when one is liable to double penalties by having scored a game towards the rubber.

Maiden over : When no runs are scored in an over it is called "maiden over".

Hat Trick : When a bowler gets three batsmen successively out without their having scored any run, he is said to have done the hat trick.

Stone Walling : Batting with caution and offering wall like resistance to the opposite party trying to force an easy or quick decision in its favour.

Touch lines : In Rugby football, lines defining boundary of the field at the sides are called touch lines.

Tee : In golf the tiny said heap or other contrivance from which the ball is first played at each hole.

Wolley : In cricket or tennis, etc. hard return of the ball before it reaches ground.

A Tackle : It is a tackle when the holder of the ball is held by players of opposite side in Rugby.

Golf clubs : Are called the putter, the driver, the brassy, the spoon, the mashie and the niblick.

Caddie : The person who attends a golfer at play and carries the clubs.

Love all : After the game has been "set", the score is called "Love all".

A let : It is a 'Let' if in badminton the shuttle tauches the set in service, but if in play it does not invalidate the stroke.

EXPRESSIONS ASSOCIATED WITH GAMES OR SPORTS

A Half Nelson	Wrestling.	No side.	Rugby Football
Slips.	Cricket.	Deuce.	Tennis.
A half ball.	Billiards.	Niblick.	Golf.
Sticks.	Hockey.	Bully.	Hockey.
Gully.	Cricket.	Crease.	Cricket.
Try.	Rugby.	Screm.	Rugby Football.
A cannon.	Billiards.	The Ropes.	Game of Bowles.
A gold.	Archery.		
Seconds out	Boxing.	Googly.	Cricket.
A grand slam.	Playing cards.	Square-leg.	Cricket.
		Styme.	Golf.

A duck.	Game of Bridge.	Gambit.	Chess.
Dribble.	Football.	l b. w.	Cricket.
Chukker.	Polo.	Corner.	Hockey.
Short-leg.	Cricket.	Checkmate.	Chess.
Short-stop.	Baceball.	Diamonds.	Bridge and Baseball.
Touchdown.	Football.		

SPORTS MEASUREMENTS

Basket Ball	85 ft. by 46 ft.
A Lawn Tennis Court	78 ft. by 28 ft.
A Hockey Ground	100 yards to 60 yards.
A Polo Ground	300 yards to about 150-200 yards.
Foot.ball Ground	100. 130 yards length and 50. 100 yards breadth.
A Badminton Court	44 ft. by 20 ft in double court, and 44×17 ft. in single.
Boxing Ring	12 sq ft.×20 sq ft.
Cricket	22 yards between the wickets.
Derby Course	One and a half mile.
Baseball	Diamond-shaped ground. 90ft. on each side and 127 ft. along the diagonals.

SPORTS STADIA IN INDIA

Nehru Stadium—Madras; National Stadium—Bombay; Braboune Stadium-Bombay; Eden Gardens-Calcutta; Green Park-Kanpur; Keenan Stadium—Jamshedpur; Yadavindra Stadium—Patiala; Ranj Stadium—Calcutta; Barahat Stadium—Cuttack, National Stadium—New Delhi.

FIFTH ASIAN GAMES

Fifth Asian Games were held at Bangkok from 10th December to 21st December 1966. 18 Nations participated in the 15 event programme.

The participating countries were :—

Japan, South Korea, Thailand, Malaysia, India, Iran, Indonesia, Taiwan, Israel, Philippines, Pakistan, Burma, Singapore, South Vietnam, Ceylon, Hong Kong, Afghanistan and Nepal.

India won seven gold medals, the same number as Malaysia.

We give below the number of gold, silver and bronze medals won by the participant countries :

	G	S	B
Japan	78	53	33
South Korea	12	18	21
Thailand	12	14	11
Malaysia	7	5	6
India	7	3	11
Iran	6	8	15
Indonesia	5	5	13
Taiwan	5	4	10
Israel	3	5	3
Philippines	2	15	25
Pakistan	2	4	2
Burma	1	0	4
Singapore	0	5	7
South Vietnam	0	1	1
Ceylon	0	0	6
Hong Kong	0	0	1
Afghanistan	0	0	0

India won the cherished *gold medal in Hockey* defeating Pakistan.

INDIAN TEAM

Shaakar Laxman (Captain); Gurbux Singh; Prithipal Singh; Balbir Singh (services) ; Jagjit Singh and A Frank ; Balbir Singh (Railways) ; Balbir Singh (Panjab) ; Harbinder Singh; Inder Singh and Tarsem Singh.

NOBEL PRIZE WINNERS 1963-67

Physics. 1964. Prof. Charles Townes (U.S.A.), Prof. Nikolai Basov and Prof. Alesk Sander Prochorov (U.S.S.R.).

1965. Prof. Shinichiro Tomanoga (Japan) Prof. J. Schwinger (Harvard), Pro. R. Feynman (California).

1966. Prof. Alfred Kastler (France).

Chemistry. 1964. Prof. Dorothy Crowfoot (Britain) (woman professor at Oxford).

1965. Prof. R. B. Woodward (U.S.A.)

1966. Prof. Robert S. Mulliken (U.S.A.).

Medicine 1964. Prof. Konrad Bloch (U.S.A.) and Prof. Feodor Lynen (Germany).

1965. Prof. F. Jacob, A. Lwoff and J. Monod (France) for their discovery of the genetic control of enzymes and virus synthesis.

1966. Prof. Peyton Rous, Prof. Charles Huggins (U.S.A.) for hormonic treatment of prostatic cancer.

Literature. 1963. Giorgos Sefaris (Greek poet).

1964. Jean Paul Sarter (France), he declined the award; he is the third person to do so.

1965. M. Sholokhov (U. S. S. R.) for his book "And Quiet Flows the Don".

1966. Samuel Agnon and Madame Nelly Sachs (Jewish writer).

Peace. 1963. It was shared by the International Red Cross Committee and the League of Red Cross Societies.

1964. Dr. Martin Luther King (U. S. A.) (aged 36). He is the second negro to win this award.

1965. U. N. Children Fund. (*U. N. I. C. F.*)

1966. No award.

NOBEL PRIZES WINNERS 1967

Physics. Prof. Hans Albrecht Bethe (of Cornell University, Newyork) 'for his contribution to the theory of nuclear reactions.'

Chemistry. Jointly to :—

(1) Prof. Manfred Eigen (of the Max Planck Institute East Germany).

(2) Prof. Ronald G. W. Norrish (Institute of Physical Chemistry Cambridge).

(3) Prof. George Porter (Royal Institution London).

'For their studies of extremely fast chemical reactions, effected by disturbing the equilibrium by means of very short pnlses of energy.'

Peace Prize. No Peace Prize this year.

Medicine.

(i) Dr Argnar Graanit of Sweden.

(ii) Dr. Haldan Keefer Hartline.

(iii) Dr. George Wald.

'For their discoveries concerning the chemical and physiological visual process in the eye.

The discoveries made by them have supplied answer to questions of fundamental importance for the understanding of visual perception.

INSTITUTE OF EDUCATION FOR WOMEN
Dept. of Extension
SERVICE.
CALCUTTA-27

INDIA'S MINERAL PRODUCTS

The whole picture of the mineral products of India and their location is given below in a nutshell :

A. *Mineral in which India has extensive exportable surplus:* 1. Abrasives. 2 Bauxite. 3 Beryl. 4 Corundum. 5 Gypsum. 6. Iron ore. 7. Industrial clays. 8. Manganese ore. 9. Mica. 10. Magnesite. 11. Monazite. 12. Ilmenite. 13. Refractory Minerals. 14. Silica. 15. Steatite. 16. Titanium. 17. Thorium ores.

B. *Minerals in which India is self-contained and which are also sufficient for her future expansion though some of which have not been sufficiently exploited :* 1. Alum. 2. Aluminium. 3. Antimony. 4. Arsenic. 5. Building materials. 6. Borax ore. 7. Cement meterials. 8. Coal. 9. Coumbum. 10. Chorme ore. 11. Feldspar. 12. Glass sand. 13. Gold. 14. Industrial clays. 15. Limestone. 16. Mineral pigment. 17. Marble nitrates. 18. Pyrites. 19. Precious and semi precious stones. 20. Phosphates. 21. Rare earths. 22. Red stone. 23. Sodium salts and alkalies. 24. Slate. 25. Uranium. 26. Zircon. 27. Refractory minerals.

C. *Minerals in which India is deficient and dependent upon imports :* 1. Asphalt. 2. Cobalt.. 3. Copper. 4. Flourides. 5. Graphite, Lead. 6. Mercury. 7. Liquid fuels. 8. Molvdbenum. 9. Platinum. 10. Potash. 11. Nickel. 12. Silver. 13. Sulphur. 14. Tin. 15. Tungsten. 16. Zinc,

D. *Mineral oils :* Mineral oils have an importance of their own. Every country depends on mineral oils and gas for civil and military needs. The oil at the present is mainly produced at Digboi in Assam. The new finds in Assam are at Moran and in Nahorkatiya area. It may; however, be mentioned that not much progress has been made in the discovery of huge qnantities of oil so far.

LOCATION OF MINERALS

Aluminium (from Bauxite). Orissa, Bihar, M. P. and Maharashtra.

Aplite. Trichinopoly in Madras and Singhbhum in Bihar (limited quantities).

Asbestos. Bihar; Madras, (very limited quantities are produced).

Barytes. Madras, Andhra, Manbhum and Singhbhum districts of Bihar, also Orissa (small quantities are produced).

Bentonite. Rajputana and Jammu State.

Beryl. Rajputana; Bihar and mica mines. India is one of the largest producers in the world of this mineral, from which the metal barylum is obtained. It can be used as a canning material.

Chromite. Mysore and Singhbhum in Bihar, also in small quantities in Mysore, Maharashtra and Orissa.

China clay. Rajmahal Hills, the Singhbhum district of Bihar and Kerala.

Cobalt. Rajputana and Kerala.

Coal. Raniganj in Bengal, Jharia and Giridih in Bihar Punch-valley, Chandra, Bastar, Kobo, Jhilmili, Kanhan and Mohpani in Madhya Pradesh, Kerala State, Umaria in Rewa State, Singareni in Hyderabad, part of Andhra State. Karanpura and Talcher in Orissa, 98% of the Indian coal is raised from the Gondwana coal-fields and 2% from Assam and Rajasthan.

Copper. Singhbhum in Bihar.

Corundum. Khasi Hills in Assam, Singrauli Tehsil of Rewa, Salem district of Madras, also in Mysore.

Diamond and precious stones. They are quarried from Golkunda mines in Andhra State, also from Cuddapah, Anantapur Bellara and Kurnool district of Madras and Andhra States ; also Madhya Pradesh, of which the Panna mines are famous.

Feldspar. This is found mostly in Burdwan district of West Bengal, in Rewa State, in Madhya Pradesh, Trinchinopoly district of Madras, also Alwar,Ajmer, Marwar etc.

Fuller's Earth. This is a soft variety of clay, used mostly in the making of soap. It is found mostly in Jaipur, Jodhpur, Jaisalmer and Bikaner States of Rajasthan. Also from Madhya Pradesh and Mysore.

Gold. In the gold-fields of Kalar in Mysore and the Hutti gold mines, Raichur district of Andhra State.

Graphite. Graphite in small quantities, in Orissa, Mysore and Madhya Pradesh.

Gypsum. Rajasthan, in the Bikaner and Jodhpur States. speci ally at Utarlia, Kawas, Dhirea ; Rewa and Rajpipla in Central India, coastel belt in Gujarat, Kutch, Nellore and Trichinopoly areas in South India. in Punjab (the mountainous country in and around Simla Hill). Also in Kashmir. In Rajasthan alone. ten million tons of gypsum is estimated to be available. Also in Madras, Uttar Pradesh, Andhra Pradesh and Jammu and Kashmir.

Gypsum forms the chief raw material for the prdouction of fertilisers, ammonium sulphate, now being used for the production of artificial fertilizers at the Sindri Factory.

Ilminite. Kerala State's coastal sands.

Iron. Salem in Madras, Chandra, Dalli, Rajahra Bailadila, Rowghat and Durg district in Madhya Pradesh, Mysore State Mayurbhanj in Orissa State, Singhbhum district in Bihar, Noamandi and Bonai State.

Kyunite. Kharswan (where the largest deposits occur), Singhbhum and Seraikela district of Bihar, small quantities in Madras and Mysore States.

Lead and zinc. At Zawar mines in Udaigiri (Rajasthan).

Lignite. In the Arcot district of Madras State.

Limestone. Satna in Rewa, Katni in M.P., Sylhet, Nandigam taluk of Krishna district, Andhra State.

Magnesite. Madras, U. P. and Mysore, also Maharashtra and Rajasthan.

Manganese. Srikakulam district in Andhra State Mysore, Balaghat, Bhandara, Dongri, Buzurg about 800 miles from Nagpur, Gujarat, Maharashtra, Bihar, Orissa and Rajasthan.

Marble. Jaipur.

Mica. Kodarma in Hazaribagh District, Nellore in Madras. (Bihar alone produces 80% of this valuable mineral).

Morazite. Kerala State.

Petrolium. Digboi, Badarpur, Masimpur and Palharia fields of Assam. Moran, Rudrasagar and Naharkatiya also in Assam. Drilling is being carried out in Jawalamukhi (Panjab), and Jaisalmer (Rajasthan) for the exploration of oil and natural gas. Oil has been struck at Cambay, Ankleshwar and Kalol (Gujrat).

Red Stone. Jodhpur (Rajasthan).

Salt. Sambhar Lake in Rajasthan, Kathiawar Coast, Kutch, Orissa, Madras, Mandi State, Kerala State.

Sallpetre. U.P. and Bihar.

Silver. A little in the Kolar gold-fields, and Zawar mines in Udaigiri (Rajasthan).

Silmanite. In the Khasi Hills in Assam, which contains reserves of the order of 251,000 tons, also Rewa State. It is used in the manufacture of furnace lining in the iron and steel industry, in the glass and ceramic industry and in the manufacture of laboratory equipment and high temperature cement. There is also demand for this mineral in the world markets.

Tungsten. Bihar, Nagpur, Marwar.

Thorium. In the monazite sands found in the west and east coast of India, specially in Kerala State.

Uranium. Bihar and other places in India.

Vanadium. Singhbhum and Mayurbhanj.

Zircon. The beach sands at the southernmost tip of the Indian Peninsula.

INDIAN AGRICULTURE

About 70% of the people in India are dependent on land. But Indian agriculture is very backward and is dependent on the whims of Monsoon. India ranks first in the world in the production of tea and groundnuts. It has a virtual monopoly in the production of lac. India is the second largest producer of rice, jute, raw sugar, scsamum, castor seed and rape seed.

In order to improve agricultural yield, area under cultivation will be increased with the help of multi-purpose and small irrigation projects. It is intended to develop and popularise improved seeds, as well as manures and fertliser. Eroision is also made for plant protection from pests-diseases and locust control.

About three:fourth of cultivated land is used for food crops. The value of food crops is, however, equal to the value of cash crops. The main food crops are rice (22% of cropped area) and wheat (9% of cropped area).

About 20% of the area under crops is irrigated. About 80% of irrigated area is used for food crops.

Yield per acre in India in quite low. This is an unfortunate position.

AGRICULTURAL SECTOR UNDER THE FOURTH FIVE-YEAR PLAN

In the agricultural sector, anticipated production by 1970-71 includes 120 million tonnes of foodgrains, 13·5 million tonnes of sugarcane (gur). 10·7 million tonnes of oilseeds, 8.6 million bales of jute, 2 million bales of mesta, 35,000 tonnes of pepper, 3800 tonnes of cardamom, 27000 tonnes of ginger, 3.28 lakh tonnes of cashew nuts and 5 lakh tonnes of tobacco.

The realization of these estimates would result in a compound rate of growth of 5.59 per cent per annum in agricultural production 5.92 per cent in the case of foodgrains and 5.01 per cent in the case of non-foodgrains. The yield per acre is expected to go up by about 26 per cent in case of foodgrains, 20 per cent in the case of oilseeds, 14 per cent in the case of sugarcane, 30 per cent in the case of cotton and 13 per cent in the case of jute.

INDIA'S AGRICULTURAL PRODUCTS

Most important agricultural crops are :—

1. Rice. 2. Wheat. 3. Sugar-cane. 4. Tea. 5. Cotton. 6. Jute. 7. Linseeds. 8. Rape and Mustard. 9. Sesamum. 10. Castor seed. 11. Groundnut. 12. Coffee. 13. Rubber. 14. Millets. 15. Pulses.

Location of Agricultural Products

Barley. Punjab, UttarPradesh and Central Kashmir (average production nearly two million tons).

Cinchona. Nilgris, Mysore, Kerala, Darjeeling and Madras (Quinine is being produced from cinchona by Madras and West Bengal Government factories. 100.000 lbs. per annum). These two States meet the requirements of the whole of India with some 10 million malaria patients every year.

Cashewnuts. States of Maharashtra, Madras and Kerala.

Coconut and Copra. Chiefly grown in Kerala. Madras and Mysore, also to some extent in West Bengal, Assam, Bombay and Orissa.

Coffee. Kerala, Mysore, Nilgiris and Coorg (annual yield is about 20,000 tons).

Cotton. Gujarat, Maharashtra.

Indigo. Bihar, Madras, Uttar Pradesh and Punjab (crop is not important now owing to cheaper chemical dyes).

Gram. Punjab, U. P., Rajasthan, Maharashtra, Bihar, and in small quantities in almost all major States. Acreage is about 17,317,000 acres.

Jute. West Bengal, Assam, Orissa, Bihar, Cooch-Bihar, U. P., Madras and Kerala.

Maize. (Phulla Makai). U. P., Bihar and Punjab.

Millets. (Jowar, Bajra, Ragi, Cholum). Rajasthan, M. P., Maharashtra, Punjab and Deccan.

Opium. Ghazipur and Varanasi districts of Uttar Pradesh, Punjab and Madras.

Oilseeds. (Linseed, rape, cotton-seed, sesamum, castor seed, and groundnuts). All over India, chiefly in West Bengal, Bihar, Uttar Pradesh, Punjab, Madhya Pradesh and Madras.

Pulses. All over India.

Ragi. Localized mostiy in Madras, Mysore and Andhra.

Rice. The plains of West Bengal, Madras, Uttar Pradesh and the Deccan rivers, Bihar, the Surma and Brahmaputra Valleys and West Coast plains.

Sandalwood Oil. Mysore.

Sugarcane. Punjab, Uttar Pradesh, Bihar, West Bengal, Madras and Gujarat.

Spices. Mostly in Malwar district of Madras, South Kanara and Kerala. Mysore and Coorg.

Tea. Darjeeling, Assam, Kangra district in Punjab, Dehra Dun in Uttar Pradesh and the Nilgiris.

Tobacco. Bengal, Bihar, Maharashtra, Madras, South Kanara and Kerala, Mysore and Coorg. Dindigul cigars are known everywhere.

Vegetables. All over India.

Wheat. Uttar Pradesh, Bihar, Gujarat, Gwalior, Punjab, Haryana and parts of Central States.

INDIAN FORESTS

Forests in India cover about 6.90 lakh sq. km. i. e., about 22% of the total land area. The forest-area is however unevenly distributed. It is considerably below the average yield of forests in countries of the world. It is proposed that the area be raised to 33% of total land area.

Major Forest products,

Timber and fuel woods : Sal, Teak, Deodar, Pine, Fir, Sissoo, Toon, Jaroolf, Rosewood, Oak, Bamboo, Sundri, Sandal-wood.

Sal A hard and heavy wood, much used for railway sleepers as also in constructional work. Found in sub-Himalyas and north-eastern parts of the Peninsula.

Teak. Teak is an exceeding strong wood, and is much used in consructional work where resistance to water and pests is essential; for shipbuilding and also for ornamental work. It is mostly found in South India, westrern parts of S. India, in Kerala, Anamalai Hills, North Canada, etc. and in Chanda district of Madhya Pradesh.

Deodar. Deodar or the 'God tree, as a coniferous ever green tree, used as railway galleys and for building purposes. Found in western Himalayas.

Sissoo. In N. E. Peninsula.

Toon Toon is the Indian mahogany. It is very hard and fine grained and can be highly polished, hence it has a great popularity for furniture and for wood carving. Its colour varies from yellow to rich brown. It is found chiefly in the N. E. part of Peninsula.

Farool. Found in Assam, Bengal and Chhota Nagpur.

Rosewood. Rosewood is a rich brown wood, which derivese its name from the rose-like smell observed when it is sawn. It is used for furniture-making, for veneering (*i.e.*, overlaying this superior wood on another inferior wood) and for the manufacture of music instruments. Found chiefly in Peninsular India and Nepal.

Oak. Eastern Himalayas and Assam plateau.

Bamboo. All the evergreen and monsoon forests.

Sundri. Deltaic forest of Bengal and Orissa.

Sandalwood. It is mostly used for fragrant oil and in the drug trade, also for costly furniture and carvings. In Mysore only 2,000 tons of sandalwood is produced. It is found in Madras, Mysore and the adjoining parts of S. India.

Minor Forest Products

Essential oils dyeing and tanning substances, gums and resins, lac, bees wax, honey, etc.

Lac. It is an important forest product. It is secreted by a tiny insect—hardly one-fifteenth of an inch—on the branches and wings of certain trees such as Palas, Kusum, Boir.

etc., in Chhota Nagpur, Madhya Pradesh, Assam, Bengal, Sind and Gujarat (Pakistan), Lac is used in the manufacture of gramophone records, plastic, anti-fouling paints, and varnishes, adhesives, leather, wood-finishing and several other industries. Shellac is obtained from molten lac in the form of thick flakes. The gramophone record industry provides the largest single outlet for shellac consumption. It is also used for mechanical, paper and fabric tubes, for electrical insulation brakelining, felt and fur hats, photo-engraving, waterproof inks, munitions, pyrotechnics, rubberized fabrics and oil clothes, etc.

Besides being the means of livelihood to thousands of peasants and workers in Bihar, lac earns for India crores of rupees in valuable foreign exchange.

Silk is also considered a forest product, since the silkworm thrives on the leaves of the mulberry trees in Bengal, Madras, Mysore and Kashmir. The Tasar silk worm is reared in Bihar, Orissa, M. P. and U. P. *Endi* silk is produced in Assam from worms which feed on the leaves of the caster oil plants.

Rubber was originally a forest product, but is now a plantation product. Only 48% of the world production of rubber is from Indian forest. In India, rubber is produced in the heavy rainfall regions of Kerala State, Coorg, Mysore and the adjoining parts of Madras.
palam. Coast-lines of India.

Resin. Produced from the pines of the Himalayas and Assam hills, is used for making turpentine oil, and as refined resin. While turpentine is used for paints and varnishes and for medicinal purposes, resin is used for shellac adulteration, for the manufacture of paper and soap, etc,

After Assam, M. P. has the largest area under forests. Chief forest areas are: (1) the Himalayas, (2) Sunderbans of the Ganga Delta, (3) Rainy parts of the Western Ghats, (4) Terai Forests, (5) Assam.

IRRIGATION AND POWER PROJECTS

By the end of the Third Plan, *i. e.*, by 1966, nearly thirty six percent of the useable flow of all rivers in the country was used, as against twentyseven percent of the flow tapped by the end of the Second Plan. After this, the possibility of diverting flow into canals for irrigation will be exhausted. The net area irrigated at the beginning of the First Plan was 208-42 lakh hectares at the beginning of the Second Plan it was 227–44 lakh hectares while at present the acreage under irrigation is 364–23 lakh hectares.

MAIN RIVER VALLEY PROJECTS

Bhakra Nangal. A joint venture of Panjab and Rajasthan, this is the largest project in the country. The Bhakra Dam is 740 feet high across the river Sutlej, another Dam is under construction near Nangal. The canal system commands a gross areas of nearly 27.4 lakh hectares of which 23.7 lakh hectares will be irrigated annually. The power houses connected with the project have an installed capacity of over six hundred kilowatts. The project is estimated to have cost 175.31 crores of rupees.

Beas Project. A joint venture of Punjab and Rajasthan which consists of linking Beas and Sutlej and provides for a diversion dam at Pandoh. Besides providing irrgation to about 5.26 lakh hectares it is expected to supply nearly four-hundred megawatts of power.

Hirakud Dam Project. The 4800 metre long main Hirakud dam is the world's longest dam. Flanked on both sides by 21 kms. of dykes, it impounds 81.4 crore cubic metres of Mahanadi water. The Project is divided into two stages. Stage I of the project has been completed in all respects providing perennial irrigation to 1.54 lakh hectares in the two districts of Sambalpur and Bolangir in Orissa. The total installed capacity of the power house at Hirakud is 1,23,000 kw. Power is being supplied to various industrial and metallurgical plants at Hirakud, Rajgangpur, Rourkela, Joda, Brajrajnagar and many other places in Orissa.

Estimated to cost Rs. 14.92 crores, stage II of the project has also been virtually completed with the installation and commissioning of three generating units of 24,000 kw. each at Chiplima power house and two generating units of 37,500 kw. each at the Hirakud Power House.

Damodar Valley Project. Damodar, which was long known as the 'River of Sorrow' bringing periodic floods to Bihar and Bengal, has now been tamed by the project. The project is being implemented by a Corporation in which the Governments of West Bengal, Bihar and the Centre have representation. It has four storage dams. These dams are located at Tilaiya, Konaa, Maithon and Panchet. The three power houses of the scheme have a total capacity of over one lakh killowatts. The project also provides for three thermal stations at Bokaro, Durgapur and Chandrapura with a total capacity of 6.25 lakh kilowatts. The dam at Panchet which is the highest of the four is 157 feet above foundation. The scheme is estimted to cost over $34\frac{1}{2}$ crores of rupees.

Rajasthan Canal. Thif project aims at constructing a canal from the Harike barrage across the river Sutlej. It will have two canals out of which (*a*) the Rajasthan Feeder Canal, 215.6 km. long of which nearly 179.6 km. will be in Panjab. (*b*) The other canal known as Rajasthan Canal 470 km. long is in Rajasthan. The project will mainly benefit dry areas in Rajasthan. Estimated cost is 66 47 crores.

Chambal. Project, The first phase of the project, which is being jointly executed by the Madhya Pradesh and Rajasthan Governments, consists of the Gandhi Sagar dam, Gandhi Sagar power station, transmission lines, Kotah barrage and canals on either side of the barrage. The reservoir to be formed by the Gandhi Sagar dam will have a gross storage capacity of 8,444 lakh cubic metres of water. The canal system will irrigate 4.45 lakh hectares in Rajsthan and Madhya Pradesh. Besides, 80,000 kw. of power will be generated from the five generating sets at the Gandhi Sagar power station. The Gandhi Sagar dam and power station with four units have been completed and power generation was started from Nov. 19,1960. The Kotah barrage has also been completed and water for irrigation was released on November 20, 1960. Work has commenced on the second stage of the project which envisages the construction of the Rana Pratap Sagar dam and a power house below it. When completed, it will provide irrigation facilities to 1.21 lakh hectares and generate 90,000 kw. of power at 60 per cent load factor.

Work has also been undertaken on the third stage of the project which comprises the construcion of Kotah dam and a power station at its toe, which will have three units of 33,000 kw. each with provision for the installation of a fourth one. On completion, it will produce 60,000 kw. of power at 60 per cent load factor.

Mayurakshi. This project, which is in West Bengal, irrigates over 2.63 lakh hectares of land annually and produces four thousand kilowatts power. Under the project, a dam across the river Mayurakshi in West Bengal has been constructed. This dam is 155 feet high.

Nagarjunasagar Located in Andhra Pradesh it comprises of a masonary dam across the river Krishna near Nandikonda village and two canals on either side. The dam and the canals are expected to be completed by 1969 and will irrigate an area of over twenty lakh acres. The revised estimated cost of the project is Rs. 139.53 crores.

Tungabhadra A joint venture of Andhra and Mysore. It comprises a 1741 metre long and 49.38 metre high dam on the Tungabhadra at Mallapuram with 3 canals on either side and three power houses. An area of about 55.847 hectares in Andhra Pradesh and 1.21 lakh hectares in Mysore has been brought under irrigation. It is expected to cost over 441 crores of rupees.

Kosi. The Kosi project includes a barrage across the river at Hanuman Nagar in Nepal. about 150 miles of embankment along both the banks of river and a canal system to take off from the barrage. The project will be completed in three units and is expected to cost 45 crores of rupees. Beside providing protection against floods, it will irrigate over, 14 lakh pcres in Bihar

Gandak. Under an agreement with Nepal, the project is being carried out and wonld be completed by 1970. It will mostly benefit Nepal and provide irrigation facilities to 38 lakh acres in both the countries. A power house of fifteen thousand kilowatts capacity will be constructed by India as a gift to Nepal. Under the scheme, which is being participated in by Bihar and Uttar Pradesh, a barrage of nearly 2800 ft. in length will be constructed across the river with two canal systems. The cost of the projects will be 56 crores. The barrage which will Provide a road-*cum*-railway bridge across the river will improve communication and trade facilities with Nepal.

Rihand Dam Project. The Rihand Project, estimated to cost Rs. 46.05 crores, includes the construction of a concrete gravity dam about 300 feet high and 3.065 feet long across the River Rihand near the village of Pipri in the Mirzapur District of Uttar Pradesh, about 29 miles south of the Confluence of the Rihand and the Sone rivers. The reservior, 180 square miles in area, will store 86 lakh acre-feet of water. A power station with an initial installed capacity of 25 lakh kw. is also under construction at the top of the dam. The power station will also supply power to the aluminium industry which is the first of its kind in the State. The project will further provide irrigation benefits to about 14 lakh acres in Uttar Pradesh and about 5 lakh acres in Bihar.

Machkund Project. A joint venture of the Governments of Andhra Pradesh and Orissa, this hydro-electric project harnesses the River Machkund which forms the boundary between the two States. A dam, 176 feet high above the foundation and 1,345 feet long has been constructed at Jalaput across the Machkund river to store 6,25,000 acre feet of water. Three genarating units of 17,000 kw. each and three units of 21,250 kw· each have been coommissioned. The total installed capacity of the power station is now 1,14,750 kilotts.

NEW PLANS AND PROJECTS

Farakka Barrage. It is a Rs. 110 crore project in the Murshidabad district of West Bengal. It will, when completed irrigate thousands of acres of land and make the Ganga navigated over a long stretch.

The Government of India, very recently, entered into an agreement with Russia for the supply of equipment needed for the project. It will be completed by 1970.

Kisau Dam. It is a Rs. 90 crore scheme to construct a dam on the Tons, a tributary of the Jamuna in Uttar Pradesh. Work on it will commence in the Fourth Plan.

Tehri Dam. The first arch-dam in India on Indian and French lines on the Bhagirathi.

Sethusamudram Project. With an estimated cost of Rs. 30 crores, the work of this scheme will be taken up very shortly under the Fourth Plan. It is a scheme to connect Palk Bay with the Gulf of Mannar. The canal which is 2.1/2 mile long will provide India with an unbroken coast line reducing the distance between east and wesat coast by 368 miles.

Jawahar Dock A new wet-dock in Madras harbour in memory of the late Prime Minister, Jawahar Lal Nehru.

Thumba Project. A pride project for the exploration of outer space in Kerala. The U. N. committee on peaceful uses of outer space has agreed to sponsor it. A number of countries are participating in this project.

Harduaganj Project. A 14 crores mw. thermal power project in U.P. which when completed will fully meet the needs of more than 26 districts of the state. Russia has agreed to supply equipment worth Rs. 6 crores.

Barauni Refinery (North Bihar). The Barauni refinery in North Bihar will be based on crude oil from the Nahorkatiya region in Assam. The Government of India has signed an agreement with the Soviet Government by virtue of which the Soviet Government will give the Indian Government Rs. 12 crores to meet the foreign exchange component of the capital cost.

Heavy Electricals Plant (Bhopal). A major public sector undertaking, costing more than Rs. 100 crores, the plant has been established in Bhopal. It was inaugurated on July 1, 1960.

It is the first of its kind in India which provides employment to 35,000 persons and produces such heavy electrical equipment as hydraulics and steam alternators and capacitors worth Rs. 50 crores annually.

Bokaro Steel Plant. It is being set up at Bokaro (Bihar) in the public sector. This will be the fourth steel plant in the country. Work will start in the Fourth Plan.

Kiriburu Iron Ore Project. It is a 11 crores scheme to the south-east of Rourkela. The iron ore extracted here will be supplied to Japan and also used at Rourkela.

Gujarat Refinery Project. The Gujarat Refinery Project is being established with an aid of about 6-16 crores from the Soviet Government. The overall cost of the project is estimated at about Rs. 30 crores. This includes cost of processing units, a 24 megawatt power house, water works, land and township etc.

Neyveli Power Plant. With the technical assistance of Soviet engineers, this plant was inaugurated on August 15, 1962. It is the first unit of the 250 mw. new thermal power station at Neyvelie South Arcot). Which is capable of generating 50,000 kw. of power.

The power station will have an installed capacity of 250 mw. under the first stage of development and an additional 150 mw. under the second stage.

INDIA'S SACRED PLACES

Hindu :

(1) **Allahabad.** (Prayagraj). The famous Kumbh Mela is held here every 12 years. In U.P.

(2) **Amarnath.** A majestic cave, where worship is done to Shiva in the Sawan month (July-August) on the night when the moon is full. Near Pehlgam in Kashmir.

(3) **Ayodhya.** Here Sri Ram Chandra was born. In U.P.

(4) **Badrinath.** Located in Himalayan mountains; Worshipping place of Nar and Narayan. In U.P.

(5) **Banaras (Varanasi).** Stronghold of Brahmanism and seat of Sanskrit learning. In U.P.

(6) **Brindaban.** Here Lord Krishna spent his happy childhood. In U.P.

(7) **Baidyanath Dham.** Has 22 temples, the oldest temple devoted to Shiva. In Bihar.

(8) **Bindyabasini.** Devi Ashtabhuji's temple is here. In U.P.

(9) **Chandranath.** Contains numerous temples devoted to various gods and goddesses.

(10) **Garhmukteshar.** Near Meerut. Great pilgrimage centre.

(11) **Haridwar.** The Kumbh Mela centre. Footprints of Shri Krishna are shown here; In U.P.

(12) **Kailash.** Abode of Parvati and Shiva. In U.P. Peak near Mansarovar.

(13) **Kalighat.** Devoted to the worship of Kali. In Calcutta.

(14) **Kamrup.** Temple of Kamakshya Devi is located here. In Assam.

(15) **Kangra.** The ancient temple of Vajreshwari or Mata Devi.

(16) **Kumbakonam.** In South India, contains the sacred tank known as Amritvapi. The Mahamaham Mela is held here like the Kumbh Mela of North India.

(17) **Kurukshetra.** In Punjab, birth-place of the Bhagwad Gita.

(18) **Madura.** Founded by Shri Ramchandra during exile on his way to Ceylon. In Madras. Famous temple city.

(19) **Mathura.** Birth-place of Sri Krishna. In U.P.

(20) **Nasik.** Famous for its connection with the Ramayana Epic. Here was the *Panchvati*, where Rama resided during his exile and where Surpanakha, sister of Ravana, King of Ceylon, got her nose cut by Rama's brother Lakshman. Every twelfth year a Maha Kumbh is held here.

(21) **Parashuram Kund.** In the Mishmi Hills in Assam. The last earthquake in Assam shook the hills overhanging it, filling it with sand and rock.

(22) **Puri.** Here the Rath festival of Jagannath is held in Orissa.

(23) **Prawash.** It has Devi Chandrabhaja's temple. In Kathiawar.

(24) **Rameshwaram.** Connected with Shri Ram Chandra's halting place on his way to fight Ravana in Lanka. In Madras.

(25) **Sultangunj.** Built on a rock in the middle of the Ganga and containing the temple of Gopinath.

(26) **Tarakeshwar.** Devoted to the worship of Shiv. In Bengal.

(27) **Pauri Garhwal.**' The famous Kedarnath temple in Pauri Garhwal.

Sikhs;

1. **Amritsar.** "Golden Temple."

2. **Nankana Sahib.** Guru Nanak's birth place (now in Pakistan).

Ruddhist :

1. **Bodh Gaya.** Has the sacred pipal tree associated with the memories of Buddha. (Near Gaya). Here he attained *Samma Sambodhi* (Supreme Enlightenment).

2. **Saranath.** Here Buddha preached in the Deer Park his first sermon on the doctrine of Niravana (or that he 'set in motion the Wheel of law"). A tower marks the spot. Near Banaras (Varanasi).

3. **Kushinagar.** Where Buddha passed away into *Mahaparinirvana.*

4. **Kajri** Said to contain the granite hill which Buddha visited and which became scene of the famous conversion.

5. **Rumendai Garden.** Associated with the memories of Buddha as the Lumbini in Nepal. Here Buddha was born to Mayadevi.

Other places-sacred to the Buddhists are: Kapilvastu (where the Buddha passed his childhood in Nepal), Sarawasti, Sankasya, Rajagriha (where the Buddha tamed the infuriated elephant Nalagini let loose on him by his jealous cousin Devdatta) and Vaisali (where in a mango grove a number of monkeys offered him honey).

Jains :

Parasanath. Contains 25 temples, each commemorating the attainment of Nirvana by one or other of the 24 Jains recognised by Jains. In Bihar·

Mount Abu. An isolated granite peak of the Aravali range. Most sacred centre of Jain worship.

Sravana Belgola. Has the statue of the Jain saint Gomatesvara.

Muslims :

Ajmer. Has the grave of Khwaja Moin-ud-din Chishti.

Sirhind. Here the Urs celebrations at Roza Sharif are annually held in November. Muslims from Afghanistan, Pakistan and different parts of India gather in large numhers.

Christians :

St. Xavier's tomb at Goa.

INDIAN OBSERVATORIES

1. **Poona.** Here meteorological observations are recorded and water charts containing weather forecasts, etc., are published.

2. **Alipore.** (Calcutta). Records storm warnings of the Bay of Bengal.

3. **Agra** Here pilot balloon observations are collected and statistically summarised.

4. **Colaba.** (Bombay). Records stellar and solar observations for the determination of time.

5. **Kodaikanal.** Devoted to the study of solar physics. It is also a lovely hill station.

6. **Madras.** Supplies time to local shipping and to the whole of India.

7. **Jaipur.** Here is observatory of the Indian type, basing its records on old Indian methods.

8. **Ujjain** has an Indian observatory.

9. New meteorological units have also been established in Aurangabad, Rajkot, Bhvnagar and Patna.

10. A microseismograph stations of Madras for the detection of tremors caused by storms at seas has also been built.

11. **Santa Cruz.** A meteorological broadcasting service has been recently established here.

12. **Naini Tal.** This is the Government-equipped latest built observatory of U. P.

13. **Gulmarg.** A new observatory has been set up here.

INDUSTRIES IN INDIA

Before we take up each industry one by one, it would not be out of place to mention that the great Fertilizer Factory at Sindri, the Chittaranjan Locomotive Works, the new steel plant at Rourkela in Orissa, the Dry Core Cable Factory, the Hindustan Machine Tools for the production of machine tools. telephone equipment, mathematical instruments, etc., all of which have been started by the Government are going to add to the industrial development of the country.

1. **Cotton and Jute Textiles Industry.** This industry owes its existance to indigenous enterprise and hence is known as Swadeshi industry. Today, it is India's largest national industry. The total production of cotton textile envisaged by 1970-71 is 10,058 million metres. The export target is 665 million metres. It gives employment, directly and indirectly, to nearly 15 million persons in India. There are 537 Cotton mills located in different parts of India. The industry is localised at Bombay. Ahmedabad, Sholapur, Nagpur, Kanpur, Madras, Coimbatore, Madura in the Madras State, Pondichery and Delhi.

2 **Tne Iron and Steel Industry.** It is considered to be a 'key' industry because other industries are dependent upon it. It is today India's great national industry. The Tata and Steel Works is the largest unit in this industry and probably the biggest in Asia. Next to these come the Steel Corporation of Bengal now amalgamated with the Iron and Steel Company Ltd. at Burnpur and another big one in the Mysore Iron and Steel Works Ltd.

The following are the places where iron and steel works are located :

Jamshedpur in Bihar (Tata Iron and Steel Works); Bengal iron Co. Ltd. Hirapur : Indian Iron and Steel Co. Ltd. at Burnpur near Asansol : United Steel Corporation of Manoharpur : Mysore Iron and Steel Works at Bhdravati : Indian Iron and Steel Company at Kulti.

To meet the increasing demand for steel, the Government has been helping the existing units to expand their capacity and by setting up new steel plants.

Three public sector units have been completed, one each at Rourkela in Orissa, at Durgapur in West Bengal and at Bhilai in Madhya Pradesh. The total capacity of these units is 3 Million tons. A new steel plant has been set up at Bokaro with technical and finanial collaboration of U.S.S.R. under an agreement concluded in Jannuary, 1965.

3. Sugar Industry. There were 175 mills in 1960-61, and the production was 30.29 lakh tonnes. The 1962-63 output was lower at 21.52 lakh tonnes, largely because of a poor sugarcane crop. The 1963-64 production at 25·67 lakh tonnes, though higher then the preceding year's, fell short of the 30 lakh tonnes estimate due to damage to sugarcane crop by adverse weather conditions. Internal consumption was 23.36 lakh tonnes, or 1·52 lakh tonnes legs than in 1962-63 ; exports were also lower at 2·50 lakh tonnes, compared to 5.14 lakh tonnes in the preceding year. Price and distribution regulations were continued to facilitate equitable distribution of the available supplies.

To augment production during the Fourth Plan Government have adopted several measures including raising of the cane price, restrictions on transport charges for cane and rebate in basic excise duty. The capacity of the industry will be augmented from 3·56 million tonnes to 4·5 million tonnes during the Fourth Five Year Plan.

4. Paper Industry. Paper industry is one of the big industries of India. Paper in India is being manufactured from woodpulp, bamboo, rags and sabai grass. There are at present 21 paper mills in India. They are widely distributed, but Calcutta is the main centre like Naihati and Raniganj, Lucknow, Bombay, Saharanpur, Panaher in Kerala and Sopor in Andhra, Bhadravati in Mysore, Poona, Dalmianagar in Bihar Sambalpur in Orissa and Jagadhri in the Punjab; Government's Nepa Mill, the first newsprint mill in India is at Nepanagar (M. P.)

5. **Match Industry.** The match industry in India is of recent origin. Before 1922, the industry was non-existent. There was only one factory known as Islam Match Factory at Ahmedabad, and that too was not in a sound position. Almost the entire supply of matches was coming from overseas countries like Sweden and Japan. Thus there was a huge drain of wealth to foreign countries for such an ordinary commodity as matches.

But now as a result of the progress of the industry, the country has almost become self sufficient in matches and the large drain of wealth on imported matches has stopped. At present there are more than 3 big f ctories and 234 small units. Capital invested is nearly Rs. 6 crores.

Location of factories. Calcutta, Madras, Baroda, Katni in M. P., Shimoga in Mysore, Gwalior, Andhra, Dhubri in Assam, Bangalore, and Delhi.

6. **The Cement Industry.** The cement industry today is an important large scale industry of India. It is regarded as one of the basic industries upon which the development of the country depends.

Important factories are located at the following places:

Madras, Porbandar and Jamnagar in Gujarat, Katni in M. P., Bihar, Patiala Rajasthan and Robertsgunj in Mirzapur District, U. P.

The industry is expected to produce 23 million tonnes by the end of the Fourth Plan representing about 50 per cent increase over the current level of production.

7. **Leather and Tanning Industry.** India has the largest number of cattle population in the world and consequently, she possesses abundant supplies of raw hide and skins, upon which is based our leather and tanning industry. There are two

sections of the industry—indigenous and modern. The former is carried on in the villages, while the latter we find in some of the big industrial centres like Kanpur, Agra, Madras, Calcutta,and Delhi. In the modern section, production is carried on with modern machinery and up-to-date methods.

The industry has a bright future in so far as there is unlimited market for the products of this industry in the country.

8. **The Glass Industry.** Like the leather and tanning industry; this industry has two sections—the indigenoues and the factory industry. The former refers to bangle making which is confined to Ferozabad in U.P. and Belgaum in Maharashtra. The modern factory section of the industry now products various types of glasswares, such as bangles, lamps, glasses, bottles, etc. There are about 123 factories including 93 bangle factories set up in various towns in U. P. such as at Ferozabad, Hathras. Ghaziabad and Benaras. There are some factories in Bengal, Bombay and the Punjab.

9. **The Chemical Industry.** It is basic industry in so far as other industries are dependent upon it for the supply of chemicals. Industries like soap, glass, textiles, paper, paints, etc., cannot flourish in a country without a properly developed chemical industry. Moreover, chemical industry is also considered essential for national defence. Hence, the industry is of strategic importance as well. The principal centres of production are Calcutta, Bombay, Madras and Delhi.

India is now able to produce quite good qualities of potassium bromide, magnesium chloride, glycerine,bichromate etc., which she is exporting in fair quantities.

NEW INDUSTRIES

10. **Automobile Industry** in Bombay, Calcutta and Bangalore.

11. **Aircraft manufacture** in Bangalore and Kanpur.

12. **Metals and metalware.** These are old Indian industries. Iron, copper, bronze have been smelted for ages and converted into goods of utility. Jamshedpur, Kulti and Burn-

pur near Asansol have important iron and steel works. Brassware manufacture is carried on at Moradabad, Banaras and other towns in U. P. ; Bombay and Poona manufacture silver. waves and Jaipur is famous for gold ornaments. Copper is smelted at Maubhandra in Singhbhum district of Bihar.

13. The Artificial Silk or Rayon Industry. The rayon weaving industry is highly concentrated in the State of Bombay and to a lesser exetnt in the States of West Bengal, Punjab (which comes next to Bomay and produces one lakh yards per day) and Madras. The important centres of production are Bombay, Ahmedabad, Surat, Calcutta and Amritsar. There are, however, a number of small units located in other parts of the country.

Transport Equipment. There are at present six automobile concerns. They are : Hindustan Motors, Calcutta ; Premier Automobiles, Bombay ; Mahindra and Mahindra, Bombay ; Ashoka Leyland, Madras ; Standard Motors, Madras and Tata Locomotives and Engineering Company, Bombay. Two more firms have been approved recently.

There are about 120 small scale bicycle factories and 25 large scale ones, with capacity to produce 20 lakh bicycle annually.

14. Iron and Steel. Mataphorically speaking, the modern age is known as iron age. The index of a country's industrial progress is judged by its iron and steel industries. Our country made significant progress by establishing three Public Sector steel plants one each at Bhilai, in Madhya Pradesh, Rourkela in Orissa and at Durgapur in West Bengal. The Rourkela plant was started with German co-operation, the Bhilai, with Soviet assistance and Durgapur plant with the help of the British combined. The costs are. 131, 170 and 138 crores of rupees respectively. They are capable of producing three million tons when in full production. The other iron and steel industries are the Tata Iron and Steel Works, which is the oldest in the country. The Steel Corporation of Bengal, now amalgamated with the Iron and Steel Company of Burnpur and the Mysore Iron and Steel Works. The Indian Iron and Steel Company at Kulty, and The United Steel Corporation of Manoharpur.

The steel production has however, had some shortfalls. The production in 1960-61 was only 2·2 million against the target of 4·5 million. During the Third Plan, the production was raised to ten million tons.

The Fourth Plan proposal is to set up a target 165 lakh tonnes of steel ingots, 40 lakh tonnes of foundry grade pig iron and 5 lakh tonnes of rolled products of alloy steels. To achieve the targets, the existing steel works would be expanded to the fullest extent possible and a new steel works, in addition to Bokaro, would be set up.

With the Fourth Plan requirements in view, thr Government have approved the setting up of two stainless steel units—one at Madras with an annual capacity of 7,000 tonnes and another at Vatwa in Gujarat with an initial annual capacity of 10,000 tonnes which could subsequently be increased to 20,000 tonnes.

To augment pig iron production, additional furnaces are being set up at Bhilai and Durgapur steel plants. A few blast furnaces complexes are also proposed to be set up in the different regions of the county which may serve as a base for steel works in the long run. Government have also approved a total capacity of 23·8 lakh tonnes of foundry grade pig iron in the private sector; the bulk of the capacity would, however, bear fruit only during the Fourth Plan period. Government have also sanctioned or approved new capacity for re-rolling and the production of special types of wires, billets, etc.

15. Locomotive and Coaches. A part of a plan to achieve self sufficiency in railway rolling stock, the Government in the Ministry of Railways established a locomotive factory at Chittaranjan in West Bengal, the Diesel Locomotive Works at Varanasi (U. P.), and the Integral Coach Factory at Perambur (Madras).

Originally designed to produce 120 locomotives and 50 spare boilers a year, the Chittaranjan Locomotive Works have been expanded and now produce WG type locomotives equivalent of over 200 standard-type locomotives. In 1963-64 the factory turned out 172 broad gauge steam locomotives (117 WG and 55 WP type); another 83 locomotives were produced up to the end of September 1964, bringing the total to 1,774 since the commencement of production in December 1950. Eventually, the aim is to manufacture 300 standard size locomotives a year. Capacity is also being developed for producing 72 electric locomotives a year.

The Diesel Locomotive Works being set up at Varanasi, has already started assembling locomotives from imported components, The first loco was commissioned in January 1964, up to the end of September 1964, 10 locos assembled from imported components and one with indigenously built chasis were produced. An out turn of 100 locos per year is expected to be reached in 1968.

The Integral Coach Factory at Perambur went into produtionin October 1955. Originally designed to produce only broad gauge couch shells, its production has been expanded and diversified to turn out furnished coaches, both broad and metre gauge, and electric multiple unit stock, During 1963-64, it produced 605 coach shells and another 341 up to the end of September 1964, bringing the total to 3,877 from its inception. Production of fully furuished coaches amounted to 352 in 1963-64 and 334 in the six months April—September 1964, making a total of 1,983 since the setting up of the furnished unit. Broad gauge electric multiple unit prototype motor coaches were turned out, for the first time, 1963-64. Prototype metre gauge twin diesel rail car manufacture was also undertaken. Besides, the Hindustan Aircraft Ltd. is producing about 300 broad gauge and a private sector compny, Jessops, about 220 metre gauge passenger coaches annually.

16. **Shipbuilding**. The Visakhaptnam shipyard was acquired by the Government from the Scindia Steamship Navigation Company in March 1952. The management was entrusted to the Hindustan Shipyard Ltd., now wholly owned by the Government. The Shipyard can build four modern diesel propelled ships a year. The first ship built in the yard was launched in March 1948. The shipyard is now manned entirely by Indian personnel.

With the completion of the first and second phases of a Rs. 2·60 crore development programme of the shipyard, the general performance of the yard distinctly improved. Procurement of indigenous materials for ship construction also improved. In the Second Plan, it was proposed to produce 75,000 to 90,000 GRT. A programme for development during the Third Plan was drawn up of an estimated cost of Rs. 2 44 crores, a part of which costing Rs. 1·13 crores has been sanctioned by Government, Preliminary steps in regard to the building of a second shipyard at Cochin with initial ship building capacity of 60,000 GRT per year, to be later raised to 80,000 GRT per year, have been taken.

17. **Fertilisers.** The fertiliser factory, built by the State at a cost of about Rs. 28 crores, is under the management of the Fertiliser Corporation of India Ltd. formed in January 1961 (authorised capital Rs. 75 crores). to administer the public sector fertiliser companies. The Sindri factory went into production in October 1951. In April—December, 1964, it produced 2,22,8/8 tonnes of ammonium sulphate compared to 2,30,597 tonnes during the corresponding period in the preceding year. The scheme to raise the output by about 60 per cent by utilising the entire quantity of 100 lakh cubic feet of gas from the coke oven plant has been completed at a cost of about Rs. 15 crores. The expansion plants now running at maximum possible capacity envisage the production of 71 tonnes of urea and 406 tonnes of ammonium sulphate nitrate (double salt) per day. In April—December, 1964, the factory produced 12,682 tonnes of urea and 33,593 tonnes of double salt, compared to 13,368 and 34,177 tonnes respectively, in the corresponding period in the preceding year.

Licences have also been granted for the setting up of fertiliser plants of different capacities in the private sector at various sites such as Visakhapatnam, Kothagudam (AP), Baroda and Kotah (Rajasthan). Fertiliser may also be produced as part of the complex proposed to be set up Talcner by the Orissa State Development Corporation. A private sector factory at Ennore (Madras), with a capacity of about 8,300 tonnes of nitrogen, went into production in January 1963.

18. **Oil,** At the beginning of the Second Plan, the country's only producing oilfield was in Assam around Digboi. The Oil and Natural Gas Commission (ONGC) has since been carrying out oil exploration work in a number of areas with

assistance from certain countries. On the results of this work, drilling was commenced mainly at Cambay, Ankleshwar, Olpad, Sanand, Kalol and Wavel in Gujarat, Rudrasagar and Sibsagar areas in Assam, Adampur and Janauri areas in Punjab and Jjhani area in U. P. Crude oil has been discovered in commercial quantities in Gujarat.

At the commencement of the First Plan, practically the entire demand of the country for petroleum products was met by imports, the output of the Assam Oil Company's refinery at Digboi having been a little more than 5 per cent of the total requirements. The establishment of three refineries was accepted as part of the First Plan: two were set up at Trombay (near Bombay) by the Standard Vaccum Oil Company (now ESSO) of new York and the Burmah Shell Group of London, respectivelly, and the third by the Caltex Company at Visakhapatnam. The annual production capacity of all the refineries at the end of 1957 was about 43 lakh tons in terms of crude processed petroleum. The patterns of production of these refineries was revised in 1958 to increase the output of kerosene and diesel oils to meet the country's urgent requirements. The present output of all these refineries amounts to about 78·5 lakh tons a year.

The public sector refinery at Nunmati (near Gauhati), with a refining capacity of 7-5 lakh tonnes, set up by Indian Refineries Ltd. (incorporated in August 1958, authorised capitul Rs. 30 crores) with the collaboration of the Rumanian Government, went into operation on January 1, 1962 and is now on full stream. The total cost of the refinery is about Rs. 17-70 crores.

The Refinery at Barauni has also been established by Indian Refineries Ltd. in collaboration with the USSR Government, with a refining capacity of 20 lakh tonnes per annum. The cost of technical assistance and equipment to be supplied by USSR was to the tune of 100 million roubles (about Rs. 11·9 crores) and 50 million roubles (Rs. 5·95 crores). The total cost of the refinery may be of the order of Rs. 41 crores. The refinery was commissioned in 1964.

Another public sector refinery, with a capacity of 20 lakh tonnes per annum, is being established at Koyali near Baroda in Gujarat by ONGC with financial and technical collaboration from the USSR authorities, to process indigenous crude oil discovered in the Gujarat region.

The Indian Oil Company Ltd., a wholly Government-owned company, was incorporated in June 1959 (authorised capital Rs. 12 crores) for the marketing and distribution of petroleum products, such as kerosene, HSD oil, aviation turbine fuel, etc., being imported from USSR and Rumania against rupee payments. The company has also made arrangements for import of transformer oil and lubricants from the USA and UK.

The Oil India Ltd. (OIL), in which the Government of India and Burmah Oil Company have equal shares, was incorporated in Assam in February 1959, for exploration and production of petroleum and crude oil (including natural gas) and for the construction of pipelines for transport of crude produced in its oilfields to the refineries; the first stage of the 720 mile long pipeline from Naharkatiya to Nunmati was commissioned in March 1962. The Company's present potential is 30 lakh tonnes per annum.

A number of pipelines have been laid to connect Gauhati and Siliguri, Calcutta/Haldia and Barauni, Kanpur and Barauni and Gujarat oilfields with power stations and other consuming centres. The Petroleum Pipelines Act, 1962 was promulgated to provide for the acquisition of right of user in land for laying petroleum pipelines.

India imports crude oil for being processed in the refineries at Bombay and Visakhapatnam, and refined petroleum products to meet the increasing demand in the country. India also exports certain petroleum products such as light distillates and paraffin wax.

Priority given to the following industries in the Fourth Plan

The following industries have been accorded priority :—

(*a*) Industrial inputs for agriculture : These include fertilizers, pesticides, farm equipment and other material inputs.

(*b*) Metals and machine-building industries : These include steel, aluminium, zinc, machinery and machine building industries of all types.

(*c*) Intermediate goods : Including industrial chemicals, petroleum, coal, iron and steel castings and forgings, *i.e.*, factories and cement : and

(*d*) Industries which produce essential consumer goods such as sugar, cloth and kerosene.

The new investment in organized industry and mining is Rs. 6193 crores, of this amount Rs. 3543 crores will be in the public sector and Rs. 2650 crores in the private sector.

The investment will be Rs. 2040 crores and Rs. 380 crores in the public and private sector, respectively, in manufacturing industries and metals, Rs. 799 crores and Rs. 450 crores respectively, in machinery and engineering industries, Rs. 493 crores and Rs. 220 crores in fertilizers and pesticides, Rs. 950 crores and Rs. 640 crores in intermediate goods, Rs. 722 crores and Rs. 640 crores in consumer goods, Rs. 260 crores and Rs. 220 crores in miscellaneous industries and Rs. 991 crores and Rs. 100 crores in mining, mineral oil and related developments.

TOWNS WITH INSTITUTIONS AND INDUSTRIES IN INDIA

Adyar (Madras)	...The Theosophical Society
Agra	...Dayalbagh Industrial Works
Ambathur (Near Madras)	...Hercules Cycles
Ahmedabad	...Cotton Textiles
Ambarnath (Bombay)	...Machine Tools
Amritsar	...Shawls, carpets, textiles and artificial silk
Bangalore	...Aircraft (The Hindustan Aircraft Factory), Telephones Machine Tools (The Hindustan Machine Tools Factory). Railway Coach Industry, Imperial Dairy Institute
Barrackpur	...The Central Inland Fisheries Research Station
Benaras	...Silk embroidery, silver and brassware
Bhadravati (Mysore)	...Paper
Bhavnagar	...Cotton Mills
Bombay	...Textiles, Deep Sea Fishing Station
Barauni (Bihar)	...Oil Refinery
Calcutta	...Jute mills; Paper Mills and Engineering industries, and scientific instruments like telescops, compasses, thermometers, microscopes etc.
Chittaranjan (West Bengal)	...Locomotives and Cables
Coimbatore (Called the Lancashire of South India)	...Textiles, Tools and Machinery for the textile industry, pumps and motor manufacturing, paints, rubber products etc.

Dalmianagar	...Cement and paper
Darjeeling	...Tea
Dehradun	...Public School, Forest Institute
Dhanbad	...Indian School of Mines
Dhariwal	...Woollen Goods Manufacture
Digboi	...Petrol
Dindigul	...Cigars
Ferozabad (U. P.)	...Glass Bangles
Ghazipur	...Govt. Opium Factory
Gondwana	...Coal-Fields
Indore	...Cotton Mills
Izzatnagar	...Railway parts manufacture and repair, Veterinary Institute
Jagadhri	...Paper
Jalahali (Mysore)	...Govt. Machine Tools Manufacture
Jamshedpur (Tatanagar)	...Tata Iron Works
Jabbulpore	...Cattle Breeding Station
Jullundur	...Sports Goods
Jharia	...Coal Mining
Kalyani (Calcutta)	...Radio Manufacture
Kanpur	...Leather, Cotton, Woollen Mills
Kasauli	...Pasteur Institute and Rabies Research Institute
Katni	...Cement Factory
Kirkee	...The Meteorological Institute
Kolar (Mysore)	...Gold Mining
Kulu Valley	...Fruits (specially apples)
Lakheri	...Cement
Ludhiana	...Hosiery
Madras	...Automobile Industry, passenger cars (Standard Motor Products), heavy trucks (Ashok Motors(, tractors, tanneries, textiles (Buckingham and Carnatic Mills

Mandapam	...The Central Marine Fisheries Reseach Station
Mirzapur	...Carpets and Lac Industry, also Government Cement Factory
Mithapur	...Chemicals
Moradabad	...Brasswares
Muktsar	...Govt. Veterinary Institute
Nepanagar	...Newsprint Paper Factory
Nagda (Madhya Pradesh)	Razor and Silk Manufacture
Nagpur	...Oranges, Cotton Mills
Peramboor (Kerala)	...Rayon, Cellopane and Cellulose Yarn
Perambur (Near Madras)	...Rly. Coach Building Factory
Pimpri (near Poona)	...Penicillin
Poona	...Meterological Institute
Punahr (Kerala)	...Paper
Rajahmundry (Andhra)	...Paper
Rajkot	...Cotton Mills
Roorkee	...Thomson Engineering College and University
Rourkela (Orissa)	...Steel Manufacture
Rupnarainpur (West Bengal)	...Telephone Cables
Sambhar	...Salt Works
Shantiniketan	...Viswa Bharati (Tagore's University)
Sindri	...Fertilizer Factory
Sinpur (Hyderabad)	...Paper
Shillong	...Oranges
Srinagar	...Woolen shawls, silk carving, silver and papier mache
Surat	...Handloom cloth, silk brocade and Emb roidery

Tanjore	...Brass plates, bronze articles, decorative articles out of sandalwood and ivory
Titaghur	...Paper Mills
Trombay (Bombay)	...Oil Refinery, Atomic Reactor Station
Tondiarpet (near Madras)	...Abrasives
Visakhapatnam	...Shipbuilding
Waltair	...Petroleum Refining

MASS COMMUNICATION

BROADCASTING AND TELEVISION IN INDIA

Broadcasting as a media of mass communication for literary, cultural and informative purposes is of recent origin. In our country, broadcasting, began in 1927 when a private company, named the Indian Broadcasting Company set up two stations at Bombay and Calcutta. The Company's venture, however, didnot succeed and it went into liquidation in 1930. Government agreed to run the stations on popular appeal. Five years later, a Controller of Broadcasting was appointed and in June 1936, All India Radio replaced the earlier name of the India Broadcasting Company. Under free India's Constitution, broadcasting is a State monopoly and a Central subject. All India Radio is controlled by a Director General who is under the Ministry of Information and Broadcasting.

Radio Stations

Radio programmes are broadcast either by short-wave or in medium wave transmitters. There are at present 34 Radio Stations and 17 auxiliary centers covering all the important linguistic areas of the country as against only six in 1947. The Stations are as under:

Delhi, Lucknow, Allahabad, Patna, Jullundur, Jaipur, Ajmer, Simla, Bhopal, Indore, Ranchi. These stations are grouped in North Zone. In the West Zone are : Bombay, Nagpur, Ahmedabad, Baroda, Poona, Rajkot, Bhuj and Goa.

The Stations in the Southern Zone are: Madras, Tiruchrrapalli Vijayawada, Trivendrum, Kozhikode, Trichur, Hyderabad, Bangalore and Dharwar. The East Zone comprises of Calcutta, Cuttack, Gauhati and Kurseeang. In addition, Radio Kashmir has two stations. one each at Srinagar and Jammu.

Vividh Bharati

This all-India light variety programme completed its 10th year in October 1967. and is now broadcast for 11·1/4 hours on week days and 12 1/2 hours on Sundays and principal festival days. The Saturday programmes include a special transmission from 9.45 to 11 p.m., providing an alternative to the National Programme of Music for such listeners as may not be interested in classical music. Besides being broadcast over to powerful short-wave transmitters from Bombay and Madras, some selected programmes are also relayed by the Goa and Gauhati stations. In additon. Vividh Bharati programmes are now available on the medium-wave from 15 centres in various parts of the country.

TELEVISION

There is only one Television service in New Delhi. This service began on an experimental basis on September 15, 1959 as part of a UNESCO Project. A regular television service has been launched for Secondary Schools with the co operation of the Ford Foundation of U.S.A. Television Programmes for general viewers are telecast on Tuesdays and Fridays for a duration of one hour. The programmes are mainly informative, and educational in character. They comprise of illustrated talks, documentaries, plays, puppet shows, Ballets and discussions.

The UNESCO Project on Social Education, meant primarily to assess the effectiveness of social education telecasts on organised groups or teleclubs, was undertaken with the cooperation of UNESCO in 1960 and completed in 1961. The assessment report prepared by the Indian Adult Education Society and published by UNESCO has established the effectiveness of the telivision medium not only in communicating information but also in moulding attitudes.

The School Television Section is putting out regular instructional programmes on selected subjects supplementing the regular school instruction since 1961 Lessons in Chemistry, Physics and Current Affairs for the IX, X andXI classes and English lesson for the VI and VII classes of the Higher Secondary School in the capital are being televised. Four hundred and twenty-three telivision sets have been installed in 231 schools. All the 367 Higher Secondary Schools in Delhi are proposed to be covered in due course. It is estimated that more than 24000 students view science lessons. 35000 students take advantage of lessons on social studies and 70,000 students view English lessons.

There are at present 650 television receivers in operation in Delhi.

SEAPORTS IN INDIA

Alleppy (Kerala State)
Baradile (Orissa)
Bori Bandar
Bhavnagar
Bimlipatam (Madras)
Bombay
Cochin
Calicut
Calcutta
Chandhli (Orissa)
Coconada (Madras)
Cuddalore (Madras)
Cutch Mandir (Cutch)
Cuttack (Orissa)
Dhanuskodi (Madras)
Port Blair (Andamans)
Madras
Maya Bandar (Andamans)
Gopalpur (Orissa)
Kandla
Mormugao
Mangalore (Madras)
Masulipatam (Madras)
Navlakhi (Morvi State)
Nagapatam (Madras)
Okho
Porbandar
Quilon (Kerala State)
Surat
Tellicherry (Madras)
Tuticorin (Madras)
Visakhapatnam

Aerodromes

Eighty-four aerodromes are controlled and operated by the Civil Aviation Department.

Aerodromes are of four categories (i) International aerodromes, (ii) Major aerodromes, (iii) Intermediate aerodromes and (iv) Minor aerodromes.

(i) **International Aerodromes.** International Aerodromes are located at Bombay (Santacruz), Calcutta (Dumdum) and at Delhi (Palam).

(ii) **Major Aerodromes.** Major aerodromes are located at Agartala, Ahmedabad, Begumpet, Delhi (Safdarjung), Gauhati, Madras (St. Thomas Mount), Nagpur and Tiruchirapalli.

(iii) **Intermediate Aerodromes.** Intermediate aerodromes are situated at Allahabad, Amritsar, Aurangabad, Baghdogra, Balurghat, Banaras, Baroda, Bergaum, Bhavanagar, Bhopal, Bhubaneshwar (Cuttack), Bhuj, Bombay (Juhu), Chandigarh, Coimbatore Cooch Bihar, Gaya, Gorakhpur, (Kusmi), Indore, Jaipur, Junagarh (Keshod), Kailshahar, Camelpur, Khowai, Kumbhigram, Lucknow (Amausi), Madurai, Mangalore (Bajpe), Mohanbari, North Lakhimpur, Passighat, Patna, Porebunder, Rajkot, Rupsi, Trivandrum, Vijaywada and Visakhapatnam.

(iv) **Minor Aerodromes.** There are small aerodromes at the following places : Akola, Asansol, Bareilly, Bilaspur Behala, Chakulia, Cuddappah, Donakonda, Haldwani, Jhansi, Jharsuguda, Jabalpur, Kandla, Kanpur, Khandwa,, Kolhapur, Kotah, Kulu (Bhuntar), Lalitpur, Malda Manipur Road, (also at Talihal), Muzaffarpur (Rewaghat) Mysore, Palanpur, Panagarh, Panna, Rajpur, Rajahmundry, Ramnath, Ranchi, Satna, Shaharanpur, Shella, Sholapur, Tanjore, Vellore, Waiangal and Udaipur.

The construction of a new aerodrome at Khajurao is complete and at Jogbani is in progress.

Customs Aerodromes. The following aerodromes have been declared Customs aerodromes. They are at Ahmedabad, Bombay (Santacruz), Calcutta (Dum Dum), Delhi (both Palam and Safdarjung), Madras (St. Thomas Mount), Patna, Tiruchirapalli, Varanasi, Jodhpur, Bhuj and Amritsar.

FOURTH FIVE YEAR PLAN

Planning Minister Ashok Mehta presented to Parliament on August 29, 1966 the draft outline of the Rs. 23,750 crore Fourth Five-Year plan.

With a projected investment of Rs. 16,000 crores in the public sector and Rs. 7,750 crores in the private sector in the plan envisages an over all compound annual growth of 5.5 per cent during the five-year period. The anticipated growth rate is 5.59 per cent in agriculture and 13.7 per cent in industry.

The financing of the public sector outlay will involve mobilization of additional resources of the order of Rs. 2.713 crores through taxation and surpluses of State entrerprises, Of this Rs. 1.745 crores will be raised by the Central and Rs. 985 crores by the States.

This compares with Rs. 2,880 crores during the Third Plan —Rs. 2,270 crores by the Centre and Rs. 610 crores by the States.

The foreign exchange component of the Plan at the new rate ef exchange is to the equivalent of Rs. 4.800 crores, including Rs.360 crores of PL. 480 aid. Inflow of funds from abroad for the private sector is estimated at Rs. 685 crores.

The plan has set a minimum per capita level of food grain production of 18 1 ounces per day by 1970-71 as against 15.4 ounces in 1964-65. In the case of cloth, it has fixed a minimum target of 16.9 metters per capita per anuum as compared to the actual of 15.1 metrers in 1964-65.

The projections of the Plan anticipated that at 1964-65 prices, the per capita income will rise from Rs. 447 in 1964-65 to Rs. 532 in 1970-71. This means an increase of 3 per cent per annum (compound).

The Plan has set before itself an eight-fold objective :(1) To achieve self reliance in the shortest possible time (2) price stability (3) enlarged incomes of rural population (4) increased supplies of essential commodities of mass consumptlon (5) continued growth of production of metals, machinery, chemicals, power and transport industries (6) limiting population growth and (7) provision of additional facilities for the development of human resources (8) family planning.

To achieve these objectives the Plan has accorded priority to all schemes of agricultural and industrial production designed to promote exports and replace imports. Out of the public sector ontlay of Rs. 16,000 crores, agriculture, community development and irrigation account for Rs. 3,374 crores of which Rs. 835 crores will be investment.

The other public sector outlays are Rs. 2,330 crores for power, Rs. 370 crores for small Industries, Rs. 3,936 crores for organized industry and mining Rs. 3,010 crores for transport and communication, Rs. 1,210 crores for education Rs.130 crores for scientific research, Rs. 492 crores for health, Rs. 95 crores for family planning, Rs. 373 crores fer wnter supply. Rs. 280 crores for housing and construction, Rs. 180 crores for the welfare of backward classes, Rs. 50 crores for social welfare, Rs. 145 crores for craftsman training and labour welfare, Rs. 10 crores for public co-operation, Rs. 50 crores for hill areas and special areas and Rs. 70 crores for other programmes There is no specific provision for inventories in the public sector.

Investments in the private sector include Rs. 900 crores in agriculture, Rs. 50 crores in power, Rs. 320 crores in small industry. Rs. 2,350 crores in organized industry and mining Rs. 630 crores in transport and communication, Rs. 90 crores in education, Rs. 1,500 crores in housing end costruction, Rs. 10 crores in social welfare, Rs. 1,900 crores in inventories.

Outlay and investments of this order are considered necessary to achieve certain minimum capacity and production targets.

The Plan envisages a production target of 120 million tonnes of food grains, 2 million tonnes of nitrogenous fertilizers, 1 million ionnes of phoshatic fertilizer, 11.7 million tonnes of steel ingots.

33,0003 tons af aluminium, Rs. 105 crores worth of machine tools. 204 millian tonnes of sulphuric ycid, 20 million tonnes of petroleum products, 5,486 million meters of mill made cloth, 45,72 million meters of handloom, powerloom and khadi cloth 54 million tonnes of iron ore, 106 million tonnes of coal, 20 million kw. of power generation capacity, 308 million tonnes of rail, freight carrying capacity, 334,000 km. of surfaced road, 525,000 units of commercial vehicles and 3 million G. R. T. of shipping tonnages.

The targets for improvement in social amenities are also quite impressive, though not to the same extent as in agriculture and industry. The targets for 1970-71 are 97.5 million students (general education in schools).admission capacity for 30,000 in degree and 68,000 diploma (technical education), 300,000 hospital beds and 131,000 practising doctors.

Agricultural Sector

In the agricultural sector, anticipated production by 1970-71 includes 120 million tonnes of food-grains, 13-5 million tonnes of sugarcane (gur), 10.7 million tonnes of oilseeds, 8.6 million bales of jute, 2 million bales of mesta, 35,000 tonnes of pepper, 3,800 tonnes of cardamom 27.000 tonnes of ginger, 328 lakh tonnes of cashew nuts and 5 lakh tonnes of tobacco.

The realization of these estimates would result in a compound rate of growth of 5-59 per cent per annum in agricultural production, 592 per cent in the case of food grains and 501 per cent in the case of non-foodgrains. The yield per acre is expected to go up by about 26 per cent in case of foodgrains. 20 per cent in the case of oilseeds, 14 per cent in the case of sugarcane, 30 per cent in the case of cotton and 13 per cent in the case of jute.

The total outlay in the Fourth Plan under agriculture and allied programmes in the public sector will be around Rs.2.410 crores, of which Rs.1944 crores will be devoted to agricultural programmes, Rs. 260 crores to community devleopment and panchayts and Rs. 205 crores to co-operation.

Out of the outlay proposed for agricultural programmes, 37 per cent will be utilized for agricultural production, 26.7 per cent for minor irrigation, 112 per cent for soil conservation, about 6 per cent for animal husbandry, dairying and fisheries and about 6 per cent for forestry development.

This public sector outlay will be additional to the private sector investment which is expected to be around Rs. 900 crores. The total provision for minor irrigation under different heads is double of that in the Third Plan.

Irrigation.

Under mojcr and medium irrigation, additional potential of the order of 13 million acres (gross and utilization of 9 million acres (gross) is envisaged by the end of the Fourth Plan. This will bring the total irrigation potential available from mojor and medium irrigation schemes to about 56million acres (gross) of which 31 million acres will be the addition since 1950-51.

The outlay proposed for irrigation and flood control programmes in the fourth Plan is Rs. 964 crores of this. Rs.115 crores are for flood control, anti-waterlogging and anti-sea erosion schemes. The emphasis in the fourth Plan is on the speedy completion of continuing schemes. A few new schemes have been included to keep up the pace of irrigation programme, as also to meet the special needs of scarcity areas.

The fourth Plan will concentrate on consolidation of irrigation schemes already completed. A project will be considered completed only when all the actions necessary for securing optimum benefit have been taken.

The outline also refers to the fact that irrigation projects are not giving adequate financial returns. Most of them are working at a loss at present. In this connection, the Plan says that water rates should ordinarily cover working expenses and debt charges. Outside scarcity areas, irrigation schemes should not involve loss to general revenues.

According to the Plan, the existing water rates in most States are relatively low. While there has been considerable increase in the value of crops produced as a result of irrigation and maintenance cost have also greatly increased, there has not been commensurate increase in the water rates.

Out of the outlay of Rs. 2,030 crores proposed in the public sector for power in the Fourth Plan, generation accounts for Rs. 1150 crores, transmission and distribution for Rs. 605 crores, rural electrification for R. 250 crores and investigations and miscellaneous for Rs. 25 crores.

Rural Electrification

The Plan has accorded great importance to rural electrification. It has said that in furthering rural electrification the approach should be to take up areas near the transmission network. pre-determine the utilization of power for agriculture and rural industries, and pick out villages with development potential as nuclei for injecting new activity. Also, wherever intensive agricultural development programmes are being implemented and there are clusters of pumps to be energized, they should receive preference for electrification.

The broad objective of industrial development during the Fourth Plan is to provide, on the one hand, for an adequate expansion in the supply of consumer goods, primarily those which cater to the needs of mass of the people, and on the other to expand the basic and heavy industries supplying the capital goods and intermediate goods at a rapid pace so as to achieve the goal of self reliance as early as possible.

The Plan has emphasized that in the country's mixed economy, the private sector has a large role to play. "The realization of targets over the entire range of industries is to a considerable extent dependent on the violation and initiative of the private sector. In view of the uncertainty inherent in such a situation, it becomes necessary to distinguish the more important targets and programmes which have a vital bearing on the development of the economy and treat them as definite and firm targets to be realized without default."

Industries

To ensure this the Plan has suggested that private sector programmes in selected industries should be under constant review so that appropriate remedial measures can be taken. An important measure proposed is to guide and channelize the assistance by financial institutions in accordance with the priorities of private sector programmes as indicated in the Plan. Other measures will be spelt out in the final Plan document. In respect of the remaining industries; the targets are to be regarded at this stage as indicative and flexible.

According to the outline, the policy in the Fourth Plan will continue to be based on the Industrial Policy Resolution of April, 1956. The role of the public and private sectors will continue to be guided by the schedule of industries in the Resolution. Industries of basic and strategic importance will be in the public sector and its predominant role will be maintained and further strengthened. The private sector is also expected to expand and increase its activities in the spheres allotted to it.

Priorities

In accordance with the emphasis laid on agricultural production, the goal of self reliance and adequate supplies of essential consumer goods, the following industries have been accorded priority :

(a) Indusirial inputs for agriculture : These include fertilizers, pesticides, farm equipment and other material inputs.

(b) Metals and machine-building industries : These include steel aluminium, zinc, machinery and machine-building industries of all types.

(c) Intermediate goods : Including industrial chemicals, petroleum, coal, iron and steel castings and forgings, refractories and cement; and

(d) Industries which produce essential consumer goods such as sugar, cloth and kerosene.

Within this broad framework, acceleration of industrial growth and the optimum use of investment resources are sought to be achieved on the basis of fuller utilization of existing capacity through appropriate balancing investment, early completion of projects carried over from the third Plan and expansion of existing units, wherever it is not inconsistent with accepted social policy, in preference to the establ shment of new units with a view to securing additional capacity more expeditiously and with lesser investment.

The new investment in organized industry and mining is Rs. 6,193 crores of this amount Rs. 3,543 crores will be in the public sector and Rs. 2,650 crores in the private sector.

The investment will be Rs. 2040 crores and Rs. 380 crores in the public and private sectors, respectively, in manufacturing industries and metals. Rs. 799 crores and Rs. 450 crores respectively, in machinery and engineering industries, Rs. 493, crores and Rs. 220 crores in fertillzers and pesticides, Rs. 950

crores and Rs.640 crores in intermediate goods, Rs. 722 crores and Rs. 610 crores in consurmer goods, Rs. 260 crores and Rs. 220 crores in miscellaneous industries and Rs. 991 crores and Rs. 100 crores in mining, mineral oil and related developments.

The investment in the private sector represent broadly the new fixed investment corresponding to the additional capacities visualized for development in that sector during the Fourth Plan period. In addition an amount of about Rs. 170 crores of raplacement in cotton textile, jute textile and woollen textile industries will be necessary.

Though the backlog of replacement in these industries is substantial, the limitation of resources may not allow a much larger programme of modernization. In other traditional industries like sugar and paper also, substantial replacement is considered necessary.

The Foreign Exchange Requirements

The foreign exchange requirements of industry are estimated at about Rs. 2,230 crores, made up of Rs. 1,320 crores in the public sector and Rs.910 crores in the private sector. The contribution from additional output of machinery from within the country is said to have been taken into account in estimating the foreign exchange requirements.

In the Fourth Plan an important role is envisaged for the State Governments in the matter of development of industries they have been assigned responsibility in respect of developing new "growth" centres through the setting up of industrial areas : promotion of industrial ventures with assistance from industrial development of corporations : development of co-operative industrial enterprises in cotton spinning, sugar and other agricultural processing industries.

The discussion with the State Governments on the specific programmes for the Fourth Plan are yet to be held. An amount of Rs 185 crores is indicated for the industrial and mineral programmes of the State Governments.

As the bulk of this amount will be utilized in promotional activities of State Industrial Development Corporations, it is expected to catalyse industrial investments of an order substantially higher than the actual provisions in the State Plans.

The Plan outline says that the investment pattern envisages a sizeable inflow of private sector resources in the field of consumer goods, intermediate goods, machinerq, fertilizers and metals.

The targets for engineering industries, it is said, are based on utilization of installed capacity on double shift operation. In several important industries like aluminium, electrical equipment, industrial machinery, fertilizers, heavy chemicals, cement, paper and textiles, the additional capacity visualized has already been fully or substantially covered by industrial licences or letters of intent.

The outline has emphasized the need to ensure the fulfilment of the targets in basic industries and has called for positive measures to this effect. The licensing policy will have to be oriented generally to bring about the establishment of economic units and to achieve a healthy trend in the cost of production. This is particularly relevant in relation to export-oriented industries, in the context of the special effort required on the export front industrial units with record or potentiality of export performance will receive preference in licensing additional capacity, the outline says.

The new fixed investment envisaged for the private sector programmes is Rs. 2,650 crores in the industrial and mineral sectors. A study of the resources available to the private sector indicates that this order of investment might be feasible with the anticipated generation of internal resources within the corporate sector and a measure of support from the institutional agencies.

NEW PLANS AND PROJECTS
(During Fourth Five Year Plan Period)

Avadi Heavy Vehicles Factory : This factory at Avadi near Madras was inaugurated on July 3, 1967. The factory is already manufacturing ‘Vijyanta’ tanks. It is earnestly hoped that India's defence efforts will highly boost up and achieve self-sufficiency in defence production in course of time. The Project was set up in collaboration with the British firm of Vickers Armstrong and is estimated to have cost about Rs. 16.16 crores.

Ganga Bridge Project : An adventure of the State Govt. of Behar and the Union Government, this road bridge which will connect Saran, Champaran, Muzaffarpur and Darbhanga Districts of Behar with Patna, by road will cost Rs. 9 crores. This project has been included in the Fourth Five Year Plan.

Beas Project : In collaboration with the United States of America, this project will cost about Rs. 260 crores. Rs. 100 crores on the first Unit and Rs. 160 on the second Unit. Already Rs. 18 crores have been spent on the first Unit and Rs. 34 crores on the 2nd Unit.

Cochin Refinery. The Cochin Refinery was inaugurated on September 23, 1966 at Ambalamugal about 8 miles from Ernakulam. It is also a joint venture of India and the United States. This Refinery will have annual capacity of 2.5 million tonnes and is expected to touch 3.5 million tonnes target.

Mig Aircraft Production : Airo frames are being manufactured at Nasik, engines at Koraput in Orissa and electronic equipments at Hyderabad.

Nehru Setu : It is a 10,044 ft. road bridge (longest in Asia) on the river Sone and was declared open on Feb. 5, 1966. Its cost is estimated at Rs. 2.69 lakhs. It has reduced distance between Calcutta and Delhi by 125 miles.

Parambikulam-Aliyar : Project. A multipurpose inter-state hydel project, it has been constructed at a distance of 60 miles from Coimbatore in the Western Ghats. Built at a cost of approximate Rs. 60 crores, it will utilize the hydel potentialities of rivers in Madras and Kerala States. Nearly 2 1/2 lakh acres of dry and arid land will be irrigated.

H. M. T. FACTORIES (Public Sector)

The HMT is a public sector undertaking and has at present five machine tool units, each with an annual capacity of 1,000 machine tools valued at Rs. 5 crores. Two of these units are located at Bangalore and the others are at Pinjore (Haryana). Kalamassery (Kerala) and Kukatpally (Andhra-Pradesh).

To meet the ever rising demand for a variety of machine tools and the metal working machinery it is diversifying its production and shifting from the manufacture of general purpose machine tools to highly sophisticated precision machines. For this purpose a number of foreign collaboration agreements have been concluded with some of the world's leading machine tool manufacturers.

The current production programme of the Company includes high speed precision lathes, general purpose lathes, turnet lathes, copying lathes, milling machines, radial drills, grinding machines, special purpose machines. gear shapers and hobbers. single and multispindle automatics, drum type turrets and watches.

The HMT's first factory was inaugurated at Bangalore in October 1955, and the first series of 8.1/2" centre lathes came off the production line in May 1956. The factory produced 402 machines valued at Rs. 155 lakhs in 1957-58. Its output during 1959-60 rose to 702 machines worth Rs. 225 lakhs. With its production figure of 1002 machines valued at Rs. 3,50 lakhs it reached its full capacity in 1960-61.

The second factory also at Bangalore was commissioned in July 1961. While inaugurating it the late Prime Minister Jawaharlal Nehru described it as the "Gift to the Nation". It was planned, built and pressed into production without any foreign technical assistance and with no financial aid from the Government. During 1961-62 production of both the factories at Bangalore was 1,250 machines valued at Rs. 445 lakhs.. These factories almost reached their full capacity in 1963-64 and produced 2,000 machines worth roughly Rs. 925 lakhs. The output in 1966 was 1766 machines and accessories valued at Rs. 777·77 lakhs.

The third HMT factory was set up in 1962-63 at Pinjora near Chandigarh. It was inaugurated in October 1963. The factory produced 229 machines worth Rs. 156·84 lakh in 1966.

The fourth factory of the Company was commissioned in October 1964 at Kalamassary near Ernakulam in Kerala. In 1966 the factory produced 584 machines worth Rs. 230.81 lakhs.

The fifth and the last factory so far set up by the Company was inaugurated by the Prime Minister, Shrimati Indira Gandhi on August 4, 1967, at Kukatpally near Hyderabad. This factory inter alia manufactures special purpose machines which are highly suited to adaptation to mass production technique. The factory produced 19 machines and accessories valued at Rs. 61.47 lakhs in 1966-67.

With commissioning of all the five factories the total output of the HMT is estimated to reach Rs. 25 crores per annum during 1967; offering employment to about 15000 workers.

The HMT also has a watch factory at Bangalore, the first of its kind in India. Set up in collaboration with the Citizen Watch Company of Japan it has an installed capacity of 3,60,000 watches a year. It has reached a production rate of 800 Watches a day with 80 per cent indigenous content. In 1966 it produced 2,86,697 watches and earned over Rs. 10 lakhs in foreign exchange through sale of watches at the Expo' 67.

The Company is now entering the export market. It has opened offices at Frankfurt (West Germany) and New Delhi. It has already received orders from various countries including USA, West Germany France, etc for the supply of 58 machines and 10 unit heads worth Rs. 34·3 lakhs.

Though the manufacture of machine tools in India dates back to the year 1890, the industry made very little progress until 1939 when limited number of about 100 items were produced annually by individual factory owners. These machine tool manufactures were of a simple and non-specialised type. Sufficient importance was not given to quality machines because major requirements or specialised machine tools for railways defence and other factories were obtained through imports, mainly from the U. K.

The situation radically changed with the country attaining independence in 1947 and all efforts have been directed towards achieving self-sufficiency in machine tools.

Suriyur Small Arms Factory :

This factory, about 15 miles from Trinchnapalli, was inaugurated on July 3, 1966. It is estimated to have cost Rs. 12 crores and shall produce automatic rifles, light machine guns, carbines and conventional infantry rifles.

Sudemdih Coal Washery Project :

This project is to be set up with the collaboration of a Poland Firm. This Washery will have a new device for removing moisture from wet coal.

INSTITUTE OF EDUCATION FOR WOMEN
Dept. of Extension
SERVICE.
CALCUTTA-27

THE CONSTITUTION OF THE REPUBLIC OF INDIA THAT IS BHARAT

The Constitution of India was adopted by the Constituent Assembly on November 26, 1949 and came into force on January 26, 1950.

The following is the text of the Proclamation announcing the birth of the Indian Republic which was read by Mr. C. Rajgopalachari, the last outgoing Governor-General of the British Government :

"Whereas the people of India, having solemnly resolved to constitute India into a Sovereign, Democratic Republic, adopted, enacted and gave to themselves on November 26, 1949 in their Constituent Assembly the Constitution of India.

"And whereas it has been declared by the said Constitution that India, that is 'Bharat'. shall be Union States comprising within the Union territories which were hereto the Gevernors' provinces, the Indian States and the Chief Commissioner' provinces.

"And whereas this day, January 26, 1950, has been fixed for the commencement of the Constitution.

"Now, therefore, it is hereby proclaimed that on and from this day, January 26, 1950, India that is 'Bharat', shall be a Sovereign, Democratic Republic and the Union ,and its component units, the States shall exercise all powers and functions of Government and administration in accordance with the provisions of the said Constitution."

THE PREAMBLE OF THE CONSTITUTION

1. **The Preamble** to the Constitution resolves to constitute India into a Souereign, Democratic Republic in which the ultimate sovereignty, both in the Union and units, rests with the people. The principal has been very explicitly incorporated in the preamble. It reads :

"WE THE PEOPLE OF INDIA having solemnly resolved to constitute India into a SOVEREIGN, DEMOCRATIC REPUBLIC and to secure to all its citizens :

JUSTICE, social, economic and political ;

LIBERTY of thought, expression, belief, faith and worship ;

EQUALITY of status and opportunity ; and to promote among them all.

FRATERNITY assuring the dignity of the individual and the unity of Nation :

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION."

Salient Features of the Constitution :

1. Indian Constitution is very lengthy and contains 395 articles and 8 Schedules.
2. India is a Sovereign Democratic Federal Republic with bias towards unitary type of Government especially in times of emergency.
3. According to this every citizen about 21 has the right to vote *i.e.*, adult suffrage.
4. It guarantees certain rights called fundamental rights to citizens.
5. According to this India is a secular state.
6. It establishes independence of judiciary.
7. There are safeguards for linguistic minorities and backward communities.

MACHINERY OF GOVERNMENT OF THE UNION

THE EXECUTIVE

The Union Executive consists of the President. Vice-President and the Council of Ministers with the Prime Minister as its Head.

PRESIDENT

There is placed at the head of the Indian Union a functionary called the President of the Union. The President is elected for a term of five years in a joint sitting by an electoral college consisting of the elected members of both Houses of Union Parliament and elected members of the legislatures of the States. His election is thus indirect and not by direct vote of the electorate.

Election of President.

This is made clear by the Constitution which lays down that the President must be elected by the members of an electoral college consisting of—

(a) the elected members of both Houses of Parliament;

(b) and the elected members of the Legislative Assemblies of the States.

As far as practicable, there has to be uniformity in the scale of represeatation of the different States at the election of the President.

The election of the President has to be held in accordance with the system of proportional representation by means of the single transferable vote and the voting at such election must be by secret ballot.

Term of Office of the President.

The President holds office for a term of five years from the day on which he enters upon his office:

(a) the President may, by writing under his hand addressed to the Vice-President, resign his office;

(b) the President may, for violation of the Constitution, be removed from office by impeachment;

(c) the President shall, not withstanding the expiration of his term, continue to hold office until his successor enters upon his office.

Any resignation addressed to the Vice-President must be communicated by him to the Speaker of the House of the people.

Eligibility for Re-election.

A person who holds, or who has held, office as President is subject to the other provisions of the Constitution, eligible for re-election to that office.

Qualifications for election of President.

(1) No person is eligible for election as President unless he—

(*a*) is a citizen of India ;
(*b*) has completed the age of thirty-five years ; and
(*e*) is qualified for election as a member of the House of the People.

A person is not eligible for election as President if he holds any office of profit under the Government of India or the Government of any State or under any local or other authority subject to the control of any of said Government.

Protection for the President.

The President, in exercise of the powers and duties of his office, is not answerable to any Court in the Federation except when he is impeached, nor any criminal preceedings can be instituted against him during his tenure of office, nor also any civil proceedings in which relief is sought from him before two months' written notice is given for purpose.

Allowance and Privileges.

The President gets an official residence and draws a salary of Rs. 10,000 per month, which cannot be reduced during his term of office. He is also to get such allowances as were payable to the Governor-General of the Dominion of India before the commencement of the Constitntion and is entitled to the same privileges to which the Governor-General was entitled before the commencement of the Constitution.

To sum up :

PRESIDENT

Term of Office—5 years.

Salary	—10,000 rupees per month plus allowances and emoluments as determined by Parliament.
Election	—By the people through Electoral College.
Qualification	—Must be a citizen of India, at least 35 years of age and qualified for election to the House of the People.

Chief powers and duties.

(1) To enforce the Constitution and the laws made by Parliament.

Other powers.

(2) To summon Parliament, dissolve the House of the People, prorogue the Houses or either House.

(3) To address Parliament after election, summon Parliament for joint sitting if he thinks fit for resolving a knotty Bill.

(4) To veto certain Bills.

(5) To issue Ordinance under certain circumstances.

(6) To appoint the Chief Justice of India, the Attorney General. The Election Commissioner, the Comptroller and Auditor-General of India, Chairman of the Public Service Commissions and the Governors of State.

(7) To Pardon criminals.

(8) To declare a state of emergency and take the whole power of the Executive in his own hands.

(9) To be commander-in- Chief of the Armed Forces of the country.

Election to fill vacancy in the office of President.

(1) An election to fill a vacancy caused by the expiration of the term of office of President shall be complete before the expiration of the term.

(2) An election to fill a vacancy in the office of President occurring by reason of his health, resignation or removal, or otherwise shall be held as soon as possible and in no case later than six months from the date of occurrence of the vacancy; and the person elected to fill the vacancy shall, subject to the provisons of Article 58, be entitled to hold office for the full term of five years from the date on which he enters upon his office.

IMPEACHMENT

The President can be removed from office for violating the terms of the Constitution which it is his duty to project and defend. A resolution for this must originate in either House Parliament with the signature of at least 1/4th of its members and must be passed by at least 2/3rd majority of its members. The other House investigates and confirms by more than 2/3rd majority before it becomes effective. It has also given chance to the president to explain his position.

VICE-PRESIDENT

There is also provision for a Vice-President who is elected by members of House of the Union Parliament assembled at a joint sitting and voting in accordance with a system of proportional representation by means of the single transferable vote and the voting at such election is by secret ballot.

The Vice-President is an ex-officio Chairman of the Upper House—the Council of States, i. e., the *Rajya Sabha.*

He would discharge the functions of the President in the event of the occurrence of any vacancy in the office of the President by reason of his death , resignation or removal, or otherwise act as President until the date on which a new President is elected in accordance with the provision of the Constitution to fill such a vacancy.

Qualification.

No person is eligible for election as Vice-President unless he is a citizen of India, has completed his age of thirty-five years and is qnalified for election as a member of the Council of States.

Term of office.

Like the President, he is to hold office for a term of five years. He can resign by a letter addressed to the President, or he may be removed from his office by a resolution in the Council of States passed by a mojority of all the then members of the Council, and agreed to by the House of the People. At the time of entering upon his office, he must, like the President, take an oath to bear true faith and allegiance to the Constitution of India and that he would faithfully discharge the duty upon which he was entering.

COUNCIL OF MINISTERS

The Council of Ministers is modelled on the Cabinet in Great Britain and is the real executive of the Union. There is at the head of the Council, a Prime Minister, who is the leader of the majority party in the House of the People. The Ministers hold office during the pleasure of the President. The Prime Minister is appointed by the President. Other Ministers are also appointed by the President, but only on the advice of the Prime Minister. It should here be noted that the President's choice of the leader of the House is only nominal for the President may make a choice only when the political parties in the House are balanced. but when there is a clear majority of a party he has no choice but to summon the leader of the majority party to be the Prime Minister and form the government.

Powers and Position of the Prime Minister.

We have explained above how the Prime Minister is appointed. After his appointment he selects the other Ministers from among the members of his party or group. The President has no hand whatsoever in the selection he makes.

In the Cabinet he occupies a key position. He presides over its meetings. All other Ministers are under him. If a Minister disagrees with the Prime Minister, he has to resign. He distributes departments among them. It is he who creates, keeps and dissolves the Cabinet.

He exercises a general supervision over the work of other Ministers and co-ordinates their work.

He can make changes in the cabinet whenever he likes, and increase or decrease the number of Ministers.

In the meeting of the Cabinet he can override the views of the majority of the Ministers and advise the President even against the opinion of the majority of the members in the Cabinet. It is he who decides as to what should be brought before the Cabinet for its consideration. He can take action even without consulting the whole of the Cabinet.

This does not mean that he can act like a dictator. He is a leader and not a boss. He is regarded as first among equals. He has to carry the other Ministers with him. They are also the leaders of his party. He cannot afford to insult them and act constantly against their views. That would make him unpopular in his own party and weaken his position.

He is the principal channel of communication between the Cabinet and the President. All important decisions of the Cabinet are reported by him to the President.

He is considered to be the leader of the Ministerial group and its chief spokesman in Parliament and before the nation. In Parliament he represents the Cabinet as a whole and all important statements on aspects of Government's policy are made by him.

He speaks on all important Bills. When Parliament criticises the work of any of his colleagues, he defends him and bears upon himself the brunt of Parliamentary criticism.

For the nation he is the chief leader and not the President. A man with strong and commanding personality will dominate over his colleagues, whereas a weak Prime Minister may not be able to exercise so much influence over them.

The Council of Ministers is jointly responsible to the House of the People and holds office only as long as it commands majority in that House. Governed by the principle of collective responsibility, the Ministers come into office as well as go out of office together.

THE UNION LEGISLATURE

The Union Legislature is called Parliament. It consists of two houses—the Council of States (*Rajya Sabha*). and the House of the People (*Lok Sabha*). Both the Houses have got equal powers except that the Money Bills can be introduced only in the House of the People and passed even without the concurrence of the former. In cases of disagreement between the two houses on other Bills, specially important but controversial, provision is made for a joint sitting to be summoned by the President and if in that sitting the Bill with such amendments, if any, as are agreed to in the joint sitting, is passed by a majority of the total number of members of both Houses present and voting, it is deemed to have been passed by both the Houses. The President is also empowered to issue Ordinances having the force of law when Parliament is not in session and when immediate action is considered necessary by him.

The Council of States. (The *Rajya Sabha*), This Council is supposed to represent the States as units of Union and thus maintains the federal character of the Constitution. It has 250 members, 12 of whom are nominated by the President for their special knowledge or practical experience in various walk of life (specially Literature, Science, Art and Social Service). Of the remaining 238 members, the Constitution lays down that these representatives of each State shall be elected by the elected members on the system of proportional representation by means of the single transferable vote. There will be one member for every 750,000 of the population and not more than one member for every 500,000 of the population.

The Council is a permanent body, one-third of its members retiring every two years. No person is qualified to fill seat in Parliament unless he is (1) a citizen of India, (2) is not less than thirty years of age.

The House of the people (The *Lok Sabha*). The House of the people consists of not more than 521 members chosen directly by the people on the basis of adult franchise. The life of the House of the People is five years unless dissolved earlier. This can be extended in time of emergency. The representation in the House of the People of the territories comprised with in the territory of India, but not included within any State, is such as Parliament by law provides. No body below the age of 25 can be a member of the House of the people.

All the Ministers and Attorney-General of India have the right to speak and take part in proceedings in either House of Parliament, and joint sitting of the House and any committee of Parliament, of which any one of them may be named a member but are not entitled to vote. Each House is free to make its own rules of procedure and conduct of business. The Constitution contains the usual provisions regarding the election of the Speaker and the Deputy Speaker and the procedure to be followed with regard to annual financial statement and the estimates of the Union.

Functions and Powers of Parliament

Legislative Powers. The main business of Parliament is to make laws. All Bills, official or non-official, are first laid on the table of Parliament, which after due dicussion has the choice to accept or reject them. All Bills, except Money Bills, can originate in either House. Money Bills and other financial Bills can originate only in the House of the People.

The Lok Sabha can make laws on all matters included in the Union and Concurrent Lists of Subjects as well as on matters which are not included in any list. Normally it has no power to make laws on State Subjects. But it can make laws even in respect of subject mentioned in the State List if the Council of States passes a resolution by two-thirds majority declaring that any of these subjects has acquired national importance. Then again during the operation of a Proclamation of Emergency, the President can authorise Parliament to make law concerning State Subjects as well. All Bills passed by the two Houses do not become Act unless the President has given his assent. He may refuse to give his assent and send it back for reconsideration. The two Houses can over-ride the President's veto by passing the Bill a second time by simple majority.

Executive Powers. All the Ministers are collectively responsible to the House of the People. Although the methods of enforcing responsibility are not specified in the Constitution, it may be presumed that the responsibility may be enforced by the member's right :

- (*i*) of putting questions,
- (*ii*) of passing a vote of censure,
- (*iii*) of passing o vote of no-confidence against a particular Minister, for the entire Council of Ministers.
- (*iv*) of rejecting a Bill sponsored by a Minister or putting in it such amendments as are unacceptable to the Minister, or
- (*v*) of re-adjusting or rejecting any demand for grant or proposal of taxation.

Financial Powers. Again, Parliament as the nation's representative controls the finances of the Union. It manages the finances of the Union Government. No tax can be imposed or the rates of existing tax increased without the sanction of Parliament. All expenditure with the Union Government which is to incur must be authorised by this body. However certain items like the salaries of the Judges of Supreme Court, interest charges, etc., do not require the approval of Parliament. It also audits and checks the account of the Union Government through its Committee on Public Accounts. It also has the power to act as a judicial body in case of impeachment of the President when he violates the Constitution.

THE UNION JUDICIARY

The Constitution provides for the setting up of a Supreme Court of India consisting of a Chief Justice of India and seven other judges until Parliament prescribe a large number.

Appointments.

All the judges are appointed by the President by warrant under his hand and seal after consultation with the Chief Justice of India and such other judges of the Supreme Court and the High Courts in the State as may be necessary for the purpose. The appointments to the Supreme Court are made from among judges and advocates of the High Courts. Eminent jurists have also been made eligible for appointment as judges of the Supreme Court. The retiring age of a judge has been fixed at 65 years.

The Supreme Court

One of the functions of the Supreme Court is that it is a court of record and has all the powers of such a court, including the power of punishing for contempt of itself.

The Supreme Court has original as well as appellate jurisdiction. Its original jurisdiction extends to disputes between the Union and a State or between two States in so far as the dispute involves any question whether of law or fact on which the existence or extent of a legal right depends.

The appellate jurisdiction of the Supreme Court extends to cases involving the interpretation of the Constitution. This is most specially the case where appeal is made to it against any judgment, decree or final order of High Court of India, if the High Court certifies that the case involves a substantial question of law in respect of the interpretation of the constitution. The Supreme Court can itself entertain a case if it is satisfied that the case involves a substantial question of law as to the interpretation of the Constitution, even if the High Court has refused to give such a certificate. It is open to Parliament to enlarge the jurisdiction ef the Supreme Court to any of the matters in the Union List. The law declared by the Supreme Court is binding on all courts within the territory of India. The President is empowered to obtain at his descretion the opinion of the Court upon any question of law or fact which is of public importance.

Removal of a judge from office

A judge of the Supreme Court cannot be removed from his office except by an order of the President passed after an address by each House of Parliament supported by a majority of not less than two-thirds of the members of that House present and voting has been presented to the President in the same session for such removal on the **ground of proved misbehaviour or incapacity.**

Attorney General

The Attorney-General is appointed by the President. He advises the Government of India on legal matters and performs other legal duties. He has the right of audience in all courts in India.

Union Territories

All so called Union Territories are administered by the President through an Administrator appointed by him. The President can make regulations for the peace, progress and good government of these territories.

THE SERVICES

While providing for a single judiciary and uniformity in fundamental laws with a view to maintaining the basic unity of the country the Constitution also established a common All India Civil Service to many important posts. While the Constitution leaves the details of recruitment and conditions of service, etc., of the proposed service to the appropriate legislature, it contains detailed provision regarding Public Service Commissions. It makes it obligatory for the Union as well as the States to have each of them as their Public Service Commission. It is, however, open for two or more States to have a common Commission to serve their needs.

Like the judiciary the Public Service Commissions are expected to be independent of the Executive and the Legislature and to discharge their functions impartially. The Chairman and other members of the Commission are to be appointed by the President in the case of the Union Commission and the Governor in the case of a State Commission.

The main function of the Union and State Public Service Commissions is to recommend candidates for appointment to the various services, after conducting competitive examinations, interviewing them personally, examining them for their suitability for the various posts.

THE STATES

MACHINERY OF STATE GOVERNMENTS

While recommending machinery for the governance of States the Constitution has followed the pattern of the Union.

The machinery suggested for the States is on the following lines :

The Executive.

Like the Union Executive. The State Executive is also Parliamentary in character. The Governor is the nominal head, while the real authority vests in the Council of Ministers.

Governor : The Governor of a State is appointed by the President by warrent under his hand and seal and holds office during the pleasure of the President. Only a citizen of India who has completed the age of 35 years, though he may or may not be qualified for the membership of the Legislative Assembly of the State, is eligible for election or appointment as Governor. When he is apppointed, the seat either in House of Parliament or of the Legislature of a State, if he had been occupying one, must be deemed to have been vacated. He need not be a resident of that State in order to secure this eligibility. The Governor holds office for the term of five years. He can be removed from office for violation of the Constitution by impeachment.

The Powers and Functions of the Governor.

As the head of the State the executive power of the State is vested in the Governor which he exercises either directly or through officers subordinate to him in accordance with the Constitution and this authority extends to only such matters for which the State Legislature has the power to make laws.

The Governor on the advice of the Chief Minister makes rules for the convenient transaction of the Government business and allocates work among the Ministers. He appoints the Chief Minister of the State and on the latter's advice, he appoints Council of Ministers who hold office as long as they retain his confidence. He is also the chief appointing authority in the State. He has also the power to grant pardons, reprieves, respites or remission of punishment *i.e*, grant pardon to, or suspend, remit or commute the sentence of any person convicted of any offence against any law relating to a matter to which the executive power of the State extends. The Governor has also legislative powers. He is at all times potentially a participant in the law-making process. He may initiate legislation and promote it, by his right to send message to the House of the Legislature. Every Bill, after being passed (the Legistature, needs the Governor's assent, though the final passing of every Bill rests with the legislature.

More sweeping than this power are the dictatorial powers with which a Governor is armed by the Constitution by which one who happens to be a strong man may make himself feel in all spheres of Government activity. This is the power to act in certain matters at his discretion—which no one can question, not even any court. The Constitution says: "If any question arises whether any matter is or is not a matter as respects which the Governor is by or under this Constitution requried to act in his discretion, the decision of the Governor in his discretion shall be final and the validity of anything done by the Governor shall not be called in question on the ground that he ought or ought not to have acted in his discretion.

The Governor of a State is not also a mere figure head having little touch with the day-to-day working of the administration of the State or important decisions made by the Council of Ministers and laws to be passed in the State. The Constitution very expressly lays down that, "It shall be the duty of the Chief Minister of each State—

(*a*) "To communicate to the Governor of the State decisions of the Council of Ministers relating to the administration of the affairs of the State and proposals for legislature."

(*b*) "To furnish such information relating to the administration of the affairs of the State and proposals for legislation as the Governor may call for. Also he can call a Minister to submit his decisions on any matter to the Council of Ministers."

But all said, it should, however, be noted that since the Indian system of government is parliamentary, the Governor ordinarily acts in constitutional way, going by the advice of his Chief Minister and there are few occasions in the day-to-day working of the Government for the Governor to act like a boss or a dictator.

The Governor is also empowered to issue and promulgate ordinance in a state of emergency.

Council of Ministers. The Constitution says that there shall be a Council of Ministers to aid and advise the Governor in the exercise of his functions, except in so far as he is by or under the Constitution required to exercise his discretion which we have mentioned above. The Ministers are appointed by the Governor on the advice of the Chief Minister and hold office during his pleasure. They are collectively responsible to the Legislature of the State and are therefore required to work on the principle of joint responsibility.

When can the Governor disregard the advice of Ministers ?

First, during the operation of a Proclamation of Emergency caused by war or internal disorder the Governor of a State has to obey the instructions of the President and not the advice of his Ministers.

Secondly, In case of constitutional break down in the State when the President issues a Proclamation of Emergency, assuming to himself the executive authority of the State, the Governor then becomes the agent of the President and the Council of Ministers is dissolved.

The State Legislature.

For every State there is a legislature which consists of the Governor, and

(*a*) In the State of Bihar, Madras, Maharashtra, Punjab, Haryana, Uttar Pradesh and West Bengal, there are two Houses.

(*b*) In other States, only one House.

When there are two Houses of Legislature of a State the Upper one is known as the Legislative Council and the lower as the Legislative Assembly and where there is only one House, it is known as the Legislative Assembly.

No Legislative Assembly is to consist of less than 60 or more than 500 members on a scale of one representative for seventyfive thousand of population. (The new State Assemblies range from 150 to 350 members). Elections to the Assembly are direct on the basis of adult suffrage and territorial constituencies. The term of the Assembly is five years unless dissolved earlier.

Powers and Functions of the State Legislatures.

Law making. The State Legislatures can make laws on all subjects contained in the State List of Subjects as well as Concurrent List of Subjects. But if a State Law on any of the matters in the Concurrent List conflicts with a Union Law, the Union Law prevails and the State Law is considered as invalid. However, if the State Law concerning any matter in the Concurrent List has been assented to by the President in that case the State Law will prevail.

Financial. The finances of the State Government are controlled by the State Legislature. Here the Assembly alone possesses real power. No tax is levied without the approval of the Assembly. All expenditure that the State Government is to incur must be sanctioned by the State Legislature Assembly. It passes the annual Budget. The Assembly has the power to pass or reject a demand for grant. There are certain items like the salaries of the judges of the High Court, tnterest charges etc. which do not require the approval of the State Legislative Council.

Control over the Executive. The Council of Ministers which is the 'real executive' of the State Government is answerable and responsible to the State Legislative Assembly. It remains in office only so long as it is supported by a majority of the members of the Lower House. The Assembly can remove the Council of Ministers from office by passing a vote of no-confidence, by rejecting a Government Bill or by passing a cut in the Budget. Then, again both the Houses can criticise the work of the Ministry ; the members can ask questions and supplementary questions, move resolutions and make adjournment motions. This enables them to control and influence the work of the Minister.

The State Judiciary.

The States are to have their own High Courts. Every High Court is to consist of a Chief Justice and such other judges as the President of the Union may fix. All judges are appointed by the President after consultation with the Chief Justice of India, the Governor of the State concerned and the Chief Justice of the High Court of the State. The retiring age of a High Court Judge is fixed at 60.

One notable point about the High Court is that though they are a part of the machinery of State Government and their expenses are chargeable to the revenues of the State concerned, considerable amount of control is exercised upon them by the Union authorities. This is with a view to ensuring the utmost possible independence to the High Court in the discharge of their onerous duties as guardians of individual liberty and public rights.

The Union and the States.

Part XI of the Constitution describes the relation between the Union and the States. The Union Parliament has the right to establish new States or alter the areas, names or boundries of any existing state.

Legislative relations.. The legislative powers have been distributed according to three lists—*Union list*, *State list* and the *Concurrent list*. The *Union list* includes subjects of all India importance such as defence, foreign affairs, communications,currency and coinage, banking and insurance, customs duties etc. The *State list* includes such subjects as maintenance of law and order, administration of justice, local government, public health and sanitation, education, agriculture, forests and fisheries, trade and industry etc. The *Cuncurrent list* includes subjects of common interest to the Union and States such as legal systems, economic planning, social security, trade and industry, electricity, newspapers, books etc.

In regard to both these Parliament and State Legislatures can pass laws. If, however, any law made by a State clashes with law passed by Union Parliament the law of the Union Parliament shall prevail. The Union Parliament has also exclusive right to make laws regarding the subjects not included in any one of these three lists. Union Parliament can make law on subjects in State list in emergencies and whenever a State Legislature so desires, which can remain in force for 6 months.

Official Language of the Union

As provided in Article 343 of the Constitution, Hindi became the official language of the Union with effect from January 26, 1965. The form of numerals to be used for the official purposes of the Union is the international form of Indian numerals. However, under section 3 of the Official Languages Act, 1963 provision has been made for the continued use of the English language in addition to Hindi, even after January 26, 1965 for (a) all the official purposes of the Union for which it was being used immediately before that day and (b) for the transaction of business in Parliament. Under Article 346 of the Constitution, the language (or languages) for the time being authorised to be used for the official purposes of the Union shall also be the language (or languages) to be used for communication between a State and the Union and between one State and another.

Fundamental Rights

Contrary to all previous conceptions of policy in India, the Constitution has created a non-communal, Secular State in the country. The fundamental rights included in Part III of the Constitution are intended to be the principal instrument for achieving the end.

Following are the most important of them :—

That the State shall not discriminate against any citizen on grounds of religion, race, caste, sex or any of them.

Right to Equality. It means *first*, that all the citizens are equal before law. *Secondly*, no distinction is to be made on ground of colour, caste, religion, wealth, sex etc. The State shall treat all citizens alike in making appointments to public offices. *Thirdly*, all public places shall be equally open to all citizens. Untouchabilty has been abolished. *Fourthly*, the Constitution abolishes all titles except academic military distinctions. *Fifthly*, universal adult suffrage has been introduced. This gives every citizen an equal share in the government.

Right to Freedom. It includes freedom of speach and exression, the right to assemble without arms, to form associations or unions, to move freely in the territories of India and settle anywhere a man likes, to acquire land and dispose of property, freedom of trade and profession. These rights are not absolute. The State can impose reasonable restrictions and limitations on them in the interest of morality and public order. This right also includes protection against arbitrary arrest or imprisonment by the Government.

Right against Exploitation. The right forbids traffic in human beings and forced labour. The employment of children below fourteen in factories, mines and other dangerous occupations is also fordidden. The State may, however, impose compulsory service for a public purpose.

Right to Freedom of Religion. A citizen of India is free to profess, practice and propagate any religion. Restrictions on this right can be imposed on grounds of morality, health and public order. The Sikhs are given the right to carry 'Kirpans'. No religious instruction may be given in Government schools and colleges. In private insitutions. religious instruction may be given but it cannot be made compulsory for the students.

Cultural and Educational Rights. The minorities having separate cultural or language are given the right to preserve them. They can run educational insttutions of their own for propagating and preserving their own lauguages and culture. The Government while giving grants-in and shall treat such institutions on footing of equality with others. No person can be denied admission to an educational institution, whethere government or government aided, on grounds of only religion, race, casts or language.

Right to Property. No person can be deprived of his property except by law which shall provide for compensation. The State can acquire private property for public purpose on payment of compensation. A law providing for compulsory acquisition of property must receive the assent of the President of India. No such law which has been properly made can be declared as unconstitutional by the courts of the country.

Right to Constitutional Remedies. A citizen has the right to move the Supreme Court or High Court of the State to enforce these rights. These courts have the power to issue various kinds of orders or 'writs' for the enforcement of the citizens' rights.

These rights are thus the bedrock of everyone individual's liberty, and protect him (or her) against oppressive or dictatorial government or high-brow societies, or individuals who wish to ride roughshod over him. They are justicable, that is, they can be enforced by a competent court of law.

Amendments to the Constitution

The Constitution provides for making amendments to it. A bill for this can be initiated in either House of Parliament. When the majority of 2/3rd of the members of both Houses of Parliament passes the bill, it becomes a law after receiving President's assent. There are certain matters like election of the President, the Supreme Court and the High Courts, the distribution of legislative powers between the Centre and the States regarding which, besides the above procedure, not less than one-half of States is required for amendment.

Amendments to the Constitution :—

1. **First Amendment Act, 1951.** (*i*) It enables the state to make special provisions for the advancement of socially and educationally backward classes. (*ii*) It gives the State

power to impose reasonable restrictions on the citizens' right to freedom of speech and expression in the interests of friendly relations with foreign countries and will regard of "defamation or incitement to an oflence!", besides security of State, public order, decency and morailty which included originally in the Constitution.

2. **Second Amendment Act, 1952.** It tried to readjust the scale of representation of the House of the People in view of 1951 Census.

3. **Third Amendment Act, 1952.** It enables the Centre power of control over food-stuffs, cattle food and raw jute.

4. **Fourth Amendment Act, 1955.** It provided that when the State acquires private property for a public purpose, the compensation prescriben shall not be questioned in a court of law. It also enabled the State to acquire a property for its better management,

5. **Fifth Amendment Act, 1955** It empowered the President to fix a time limit for State legislatures to express their views on a proposed law relating to the area, boundary etc, of their State.

6. **Sixth Amendment Act. 1956** It added a new entry to Union list with regard to sale and purchase of goods in the course of inter-State transactions.

7. **Seventh Amendment Act 1957.** It related to the establishment of new States and changes in States, boundaries and classification areas as State territories. It also provided for bicameral legislatures for certain States.

8. **Eighth Amendment Act, 1959.** It extended by ten years the reservation of seats for scheduled castes and tribes and reservation of seat fors Anglo-Indian Commuity.

9. **Ninth Amendment Act, 1960.** It related to the transfer to Pakistan of certain territories in accordance with an agreement between the Government of Indir and Pakistan.

10. The Tenth Amendment Act of 1961 integrated Dadra and Nagar Haveli, former Portuguese enclaves liberated by the people with the Union of India, and provided for their administration.

11. The Eleventh Amendment Act of 1961 constituted the two Houses of Parliament into an electoral college for the election of the Vice-President. This obviates the necessity of a joint meeting of the two Houses (Article 66). The amendment also changed Article 71 to specify that the election of the President or the VIce-President shall not be changed on the ground of any vacancy for whatever reasons in the appropriate electoral college.

12. The Twelfth Amendment to the Constitution, enacted in 1962 integrates Goa, Daman, and Diu with the Union of India with effect from December 20; 1961. These territories were added to the first schedule. This became the 8th Union territory. Article 240 provided for their administration.

13. The 13th Amendment Bill was enacted in 1962 to facilitate the creation of the separate State of Nagaland. The Governor of Assam, who would also be the Governor of Nagaland has been given special powers, since part of the area is still not free from trouble.

14. The 14th Amendment Act was also passed in 1962, in order to provide Legislatures and Councils of Ministers in the Union territories of Goa, Pondichery, Himachal Pradesh, Manipur and Tripura. It also seeks to amend the Constitution in order to increase the number of people to represent Union territories from 20 to 25.

15. The Fifteenth Amendment Act was passed in March 1963 restricting the right of Civil Servants to only one enquiry in respect of the Departmental action. It also laid down the procedure for determining the correct age of Judges, as well as raising the retirement age of High Court Judges from 60 to 62 years.

16. The Sixteenth Amendment Act also passed this year (1963) enabled State Governments to impose restrictions on all secessionist activities. It also provided that every candidate for Parliament or Legislatures and Judges should take an oath te uphold the integrity of the country. It prescribed new forms of oath in the Third Schedule of the Constitution.

17. The seventeenth Amendment Act referred to a Joint Committee of Parliament. This Bill sought to validate land reform measures and aimed at deciding their legal validity beyond any dispute.

18. The 18th Amendment Bill introduced in the Lok Sabha on April 24, 1964 sought to suspend during an emergency any fundamental rights mentioned in the Constitution which may be specified by the President. Article 19 of the constitution relating to rights of speech, expression, association, assembly, movement etc., gets automatically suspended with the proclamation of an emergency.

The Bill sought to confer this power on the Government with retrospective effect.

19. The Lok Sabha passed the 19th Amendment bill with an amendment which names it as the 17th Amendment bill Rajya Sabha passed it on June 6, 1964.

The Bill seeks to protect land reform measures of the various State Governments from being invalidated by courts and to enlarge the definition of the term 'estate' to include Ryotwari-lands.

20. The Twentieth Amendment, which was recently inacted, validates an executive action of a State Government.

This amendment has caused bitter resentment and has been greatly criticised by sober thinkers.

21. The 21st Amendment Bill seeks to recognize **Sindhi** as one of the national languages of India by including it in the Eighth Schedule.

NATIONAL EMBLEM, FLAG, ANTHEM, SONG AND NATIONAL CALENDAR, NATIONAL BIRD

The National Emblem of India is an adaptation from the Sarnath Lion Capital of Ashoka. In the original, there is the Wheel of the Law *(Dharma Chakra)*.

In the National Emblem adopted by the Government of India on January 26, 1950, only three lions are visible, the fourth being hidden from view. The wheel (*Chakra*) appears in relief in the centre of the abacus with a bull on the right and a horse on the left and the outlines of the other wheels (*Chakras*)on the extreme right and left. The words, "Satyamave jayatee", meaning "Truth alone triumphs", are inscribed below the Emblem in the Devanagri script.

NATIONAL FLAG

The National Flag of India is a horizontal tricolour of deep saffron on the top, white in the middle and dark green at the bottom in equal proportions. The ratio of the width to the length of the Flag is two to three. In the centre of the white band is a wheel in navy blue to represent the *Chakra*. Its design is that of the wheel (*Chakra*) which appears on the abacus of the Sarnath Lion Capital. Its diameter approximates to the width of the white band and it has 24 spokes.

Use of the Flag

Rules and regulations to ensure the proper use and display of the Flag have been drawn up by the Government of India. These prohibit the dipping of the Flag to any person or thing.

No other flag or emblem should be placed above the National Flag or to its right. All flags are placed to the left of the National Flag if they are hung in a line. When other flags are raised, the National Flag must be the highest.

The Flag should not be carried flatly or horizontally, but always high and free.

When the Flag is displayed from a staff projecting horizontally or at an angle the saffron end should be at the top.

Normally the National Flag should be flown on all important Government buildings, such as High Courts, Secretariats, Commissioners' offices, etc. The President of the Indian Republic and the Governors of States have their personal flags.

The use of the Flag will, however, be unrestricted on certain special occasions, such as Independence Day, Mahatma Gandhi's birthday, during the National Week and on any other days of national rejoicing.

NATIONAL ANTHEM

Rabindranath Tagore's song *Jana-gana-mana* was adopted as the National Anthem of India on January 24, 1950. The song was first sung on December 27, 1911, during the Indian National Congress Session at Calcutta. The poet translated it into English in 1919 under the title *Morning-Song af India.* The complete song consists of five stanzas.

Jana-gana-mana-adhinayaka jaya he
Bharat.bhagya-vidhata.
Punjab-Sindhu-Gujarata-maratha.
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga-
Uchchhala-jaladhi-taranga
Tava subha name jage
Tava subha asisa mage
Gahe tava jaya-gatha.
Jana-gana-mangala-dayaka, jaya he
Bharata-bhagya-vidhata.
Jay he, jaya he, jaya he,
Jaya jaya jaya jaya he.

The following is an English rendering of the stanza quoted above:

Thou art the ruler of the minds of all people.
Thou Dispenser of India's destiny.
Thy fame rouses the hearts of the Punjab, Sind.
Gujarat and Maratha, of Dravid, Orissa and Bengal :

It echoes in the hills of the Vindhyas and Himalayas
Mingles in the music of Jamuna and Ganga,
and is chanted by the waves of the Indian sea.

They pray for Thy blessings and sing Thy praise,
Thou Dispenser of India's destiny,
Victory, Victory, Victory to Thee.

NATIONAL SONG

At the same time as the National Anthem was adopted, it was decided that Bankim Chandra Chatterjee's *Vande Mataram.* which gave Inspiration to the people in their struggle for freedom, shall have an equal status with *Jana-gana-mana, Vande Mataram* occurs in Bankim Chandra Chatterjee's novel *Ananda Math,* published in 1882.It was sung in the 1896 Session of the Indian National Congress The following is the text of its first stanza :

Vande Mataram !
Sujlam, suphlam, Malayaja-shitalam,
Shasyashyamlam, Mataram !
Shubhrajyotsna-pulkitayaminim,
Phullakusumita-drumadala-shobhinim
Subhasiuim, sumadhura-bhashinim,
Sukhadam, vardam, Mataram !

The following English translation of the stanza is by Sri Aurobindo :

I bow to thee, Mother,
Richly watered, richly fruited,
Cool with the winds of the south,
Dark with the crops of the harvest,
The mother !
Her nights rejoicing in the glory of the moonlight
Her lands clothed beautifull with her trees in flowering bloom.
Sweet of laugther, sweet of speech,
The mother, giver of boons, giver of bliss !

NATIONAL CALENDAR

In November, 1952, a Committee was appointed to examine the different calendars in use in the country and to submit a proposal for a uniform calendar for the whole of India. The Committee snbmitted its report in 1955. The decision was taken by the Government of India in consultation with the State Governments that the Gregarian Calendar should continue to be used for official and like purposes, the uniform National Calendar being adopted with effect from March 22, 1957 along with the Gregorian Calendar, for the following official purposes :

(*i*) The Gazette of India.
(*ii*) News broadcasts by the All India Radio.
(*iii*) Calendars issued by the Government of India.
(*iv*) Communications issued by the Government of India and addressed to members of the public.

NATIONAL BIRD

The Government of India have adopted the **Peacock** as the National Bird of India.

WEIGHTS AND MEASURES

Weight

1 kg. = 2·2046 lb.
0·4536 kg. = 1 lb.
1016·05 kg. = 1 ton
37·3242 kg. = 1 maund or 82·2858 lb.
1 tonne = 0·9842 ton
1 quintal = 1·968 cwt. or 220·46 lb.

Area

0·8361 sq. metre = 1 sq. yd.
1 sq. km. = 0·3861 sq. mile
1 hectare = 2·471 acres
0·40469 hactare = 1 acre or 4840 sq. yd.

Lineal

0·9144 metre = 1 yard
1 km. = 1093·61 yds. or
= 0·62137 mile
1·6093 km. = 1 mile

Liquid

1 litre = 1·759 pints
4·546 litres = 1 gallon
0·29 kilolitres = 1 quarter

ENUMERATION

1 lakh = 100,000
10 lakh = 1 million
1 crore = 100 lakhs or 10 millions

AWARDS, HONOURS ETC.

Bharat Ratna. This is the country's highest award which is meant for exceptional work for the advancement of art, literature and science and in recognition of public services of the highest order. It is in the form of a peepal leaf, over two and a quarter inches long,nearly two inches wide, an eighth of an inch thick. It is of toned bronze having a replica of the sun and the words Bharat Ratna written in Hindi on tho obverse side. On the reverse is the State emblem made of platinum. The recepients of the award are : C. Rajagopalachari, Dr. Radhakrishanan, Dr. C. V. Raman, Dr. Bhagwan Das. Dr. M. Visesuaraya, Jawharlal Nehru, Pandit Govind Ballabh Pant, Dr. D. K. Karve, Dr. B.C. Roy, Purushottam Das Tandon and Lal Bahadur Shastri (Posthumous).

Padma Vibhushan ; The awrrd is made for exceptional and distinguished service in any field including service rendered by Government servants.

Padma Bhusan : This award is made for distinguished service of a high order in any field including service rendered by Government servant.

Padma Shri : This award is also made for distinguished service in any field.

Param Vir Chakra : This is India's highest military decoration and is the Second in order of precedence of wearing medals and decorations after Bharat Ratna. It is awarded for most conspicuous bravery or some daring or pre-eminent act of valour or self-sacrifice in the presence of the enemy. It is made of bronze and is circular in shape having the State emblem in the centre. On the reverse, the word Param Vir Chakra is embossed both in English and Hindi with two lotus flowers in the middle.

GALLANTRY AWARDS

(For displaying most conspicuous bravery during Indo-Pak Conflict, 1965).

Param Vir Chakra :

Company Quarter Master Havildar Abdul Hamid.
(Posthumous)

CQMH Abdul Hamid covered himself with glory in a battle in the Kasur sector, when he destroyed two Pakistani Patton Tanks and damaged a third one before he was mortally hit by the enemy fire.

Lieutenant Gen. A. B. Tarapore. *(Posthumous)*
For displaying most conspicuous bravery in Philora.

Mahavir Chakra

The Maha Vir Chakra is the second highest decoration and is awarded for acts of conspicuous gallantry in the presence of the enemy, whether on land, at sea or in the air.

Indian Army. :

1. Captain Chander Narain Singh (posthumous)
2. Lt. Col. Gurbans Singh Sangha
3. Maj. Bhaskar Roy
4. Maj. Ranjit Singh Dayal
5. Lt. Col. Salim Caleb
6. Lt. Col. H. L. Mehta (posthumous)
7. Lt. Col. D. Hayde
8. Sub Ajit Singh
9. Major Bhupindar Singh (posthumous)
10. Major A. R. Tyagi (posthumous).

Indian Air Force :

1. Wg. Cdr. W. M. Goodman
2. Wg. Cdr. P. p. Singh
3. Sqn. Ldr. P. Gautam
4. Lt. Col. Salim
5. Lt. Col. N. N. Khanna(posthumous).

Vir Chakra

The Vir Chakra is third in the order of awards given for acts of gallantry in the presence of the enemy whether on land at sea or in the air.

Indian Army :

1. Lt. Col. Sampuran Singh
2. Subedar Man Bahadur Gurung
3. Hav. C. Perumal
4. Hav. Patharaj
5. L/Hav. Gurdev Sihgh
6. NK. Chand Singh
7. NK Prem Singh
8. L/NK. Rai Bahadur Gurung
9. Lt. Col. Chajju Ram
10. Naj. M. A. R.Sheikh (posthumous)
11. Maj. Megh Singh
12. Maj. Jitinder Kumar
13. Maj. S. C. Vadera
14. Capt. R. C. Bakshi
15. Lt. Surinderpal Sekhon
16. Lt. Teja Singh
17. 2nd Lt. I. S. Dhaliwal
18. 2nd Lt. V. K. Vaid
19. Maj. Mukhtar Singh Khaira

Indian Air Force :

1. Sqn. Leader Trevor Keeler
2. Flt. Lt. Virendra Singh Pathania
3. Sqn. Ldr. M.S. Jatar
4. Sqn. Ldr. S. Handa
5. Flt. Lt. Trilochan Singh
6. Flt. Lt. D. N. Rathore
7. Flt. Lt. A. T. Cooke
8. Flg. Off. S. C. Mamgain
9. Flg. Off. A. R. Ganddi
10. Flg, Off. V. K. Neb
11. Wg. Cdr. Bharat Singh
12. Sqn. Ldr. A.J.S. Sandhu
13. Sqn. Ldr. D. Keeler
14. Flt. Lt. A. K. Majumdar
15. Flt. Lt. V. Kapila
16. Flying Officer P. Pingle
17. Flt. Lt. H. S. Mangat.

Ashoka Chakra—I

This medal is awarded for the most conspicuous bravery or some daring or pre-eminent act of valour or self-sacrifice on land, at sea or in the air.

The Chakra is made of gilt, gold and is circular in shape. Embossed on the obverse is a replica of Ashoka's Chakra surrounded by a lotus wreath. Along the edge is a pattern of lotus leaves, flowers and buds. On the reverse, the words

"Ashoka Chakra" are embossed, in both Hindi and English, with lotus flowers in the intervening space.

The Chakra is worn on the left breast with a green-coloured silk riband, an inch and a quarter in width and divided into two equal segments by an orange vertical line.

Ashoka Chakra—II

This decoration is awarded for conspicuous gallantry. It is made of standard silver and is circular in shape. The obverse and the reverse are exactly the same as in the Ashoka Chakra, class I.

The Chakra is worn on the left breast with a green-coloured silk riband, an inch and a quarter in width and divided into three equal segments by two orange vertical lines.

Ashoka Chakra—III

This decoration is awarded for an act of gallantry. It is exactly like tha other two Ashoka Chakras, except that it is made of bronze.

The Chakra is worn on the left breast with a green-coloured silk riband, an inch and a quarter in width, divided into four equal segments by three orange vertical lines.

Vishisht Seva Medal

The Vishisht Seva (Distinguished Service) Medal is awarded to personnel of all the three Services in Class I, II and III in recognition of distinguished service of the "most exceptional", an "exceptional" and a "high" order respectively.

Class I of the medal is made of gold, Class II ef standard silver and Class III of bronze, all circular in shape and 35m.m. in diameter. Each medal has on its obverse a five pointed star and on its reverse the Lion Capital. Its ribbon is golden, with one dark-blue stripe down the centre for Class I, two dark-blue stripes dividing into three equal parts for Class II and three dark-blue stripes dividing it into four equal parts for Class III.

Jeevan Raksha Padak

The medal is awarded for meritorious acts or a series of acts of a humane nature displayed in saving life from drowning, fire and rescue operations in mines, etc.

Class I. The medal is awarded for conspicuous courage under circumstances of very great danger to the life of the rescuer.

Class II. The medal is awarded for courage and promptitude under circumstances of great danger to the life of the rescuer.

Class III. The medal is awarded for courage and promptitude in saving life under circumstances of grave bodily injury to the rescuer.

Awards to Scholars

Certificates of Honour and a monetary grant of Rs. 1,500 per annum to eminent Sanskrit, Persian and Arabic scholars have been constituted since 1958.

Arjuna Awards

The Arjuna Awards to the "Sportsmen of the Year" were instituted in 1961. The Awards are made on the basis of outstanding contribution made to enhance the glory of the game during the year.

DEFENCE

The Supreme Command of the Armed Forces is vested in the President of India, the responsibility for their administrative and operational control resting with the Ministry of Defence and the three Services Headquarters. The main function of the Ministry is to ensure that (*i*) the development and activities of the three Services are properly co-ordinated, (*ii*) decisions on policy matters are obtained from the Government, transmitted to the three Services Headquarters and implemented and (*iii*) necessary financial sanction for defence- expenditure is obtained from Parliament.

ORGANISATION

Although the overall control of the three Services vests in the Ministry of Defence, they normally function directly under their respective Chiefs of Staff. They are :—

Chief of the Army Staff ...General P. P. Kumarmanglam
Chief of the Naval Staff ...Vice.Admiral A. K. Chatterjee
Chief of the Air Staff ...Air Chief Marshal Arjan Singh

Army

The Army is organised into four Commands—Western, Eastern, Southern and Central—each under a General Officer Commanding in-Chief of the rank of Lieutenant-General. The Commands are divided into Areas, each under a General Officer Commanding of the rank of Major-General. The areas are sub-divided into Sub Areas, each under a Brigadier.

The Army Headquarters, located in Delhi, functions under the Chief of the Army Staff, assisted by the Vice Chief of the Army Staff and the Deputy Chief of the Army Staff. The Vice Chief controls the Directorates of Military operations. Military Intelligence, Military Training. Combat Development and Brigadier Engineer Staff while the Deputy Chief controls the Directorates of Staff Duties, Weapons and Equipment, Armoured Corps, Artillery, Signals. Infantry, Territorial Army and the Defence Security Corps. The three other Principal Staff Officers are the Adjutant-General. Quarter-Master-General and the Master General of Ordnance controlling their respective branches. Two other branches are the Engineer-in-Chief's, Branch and the Military Secretary's Branch.

The General Staff Branch consists of the Directorates of Military Operations, Military Intelligence, Staff Duties, Military Training, Armoured Corps, Artillary, Signals, Infantry. Territorial Army, Defence Security Corps and Border Roads.

The Adjutant-General's Branch is divided into three Directorates, namely—Organisation, Recruiting and Personal Services and include the Judge Advocate-General's Department. The Medical Directoate, though separate under a Major-General, is technically placed under this branch.

The Quarter-Master-General's Branch has two Directorates one to organise all rail, sea and air movements of personal and stores within and outside the country, and the other to provide accommodation for personnel. The Directorate of supply and Transport, Remounts and Veterinary, Military Farms, Postal Services, Pioneers and the Chief Techincal Examiner of Works are also under the overall supervision of the Quarter-Master-General.

The three Directorates under the Master-General of Ordnance are Ordnance Services, Procurement Progressing Organisation and Electrical and Mechanical Engineers. The Ordanace Services Directorate is responsible for procuiring, stocking and supplying all kinds of defence equipment required for troops- Th Eloctrical and Mechanical and Engineers Directorate is charged with the responsibility of inspection, repair and maintenance of all types of mechanical and electrical equipment used by the Army.

The Engineer-in-Chief isithe head of the Corps of Engineers He advises the Chief of Staff of the three services and the Director-General of Ordnance Factories on all matters concerning works, including their planning and construction. He has a number of Directorates under him, namely—policy and Co-ordination, Transport Personnel, Army Works, Air Force Works, Work Study, Engineer Staff, Engineer Stores, Plants and Directorate-General of Works.

The Military Secretary maintains personal records of officers and is responsible for their postings and transfers, promotions and retirment as well as for the grant of honorary ranks.

Navy

At the Naval Headquarters in Delhj, the Chief of the Naval Staff is assisted by four Principal Staff Officers, namely —the Deputy Chief of the Naval Staff, the Chief of Personnel, the Chief of Meterial and the Chief of Naval Aviation. He functions through four Operational and Administrative Commands, one afloat and three ashore. These are: (i) Flag Officer Commanding, Indian Fleet (ii) Flag Officer, Bombay, (iii) Commodore-in-Charge, Cochin and (iv) Commodore, East Coast, Visakhapatnam.

Today, the Indian Fleet consist of I. N. S. Vikrants (Flagship of the Navy), an aircraft-carrier, I.NS. Mysore, a Colony class cruiser, I. N. S., Delhi, a Leader-class cruiser, two Destroyer Squadrons, (I.N.S, Rajput, Ranjit, Rana, Godavari, Gomati and Ganga) and a number of Frigate Squadrons including some of the latest types of anti-submarine and anti-craft frigates. These new types of frigates, specially constructed for the Navy in the U.K., are I. N. S. Brahmputra, Beas, Betwa, Khukri, Kirpan, Kuthar, Talwar and Trisul. The former frigates are I.N.S. Couvery, Kistna and Tir, which are now being used for cadet's training. The three Mine-sweeping Squadrons are formed by I.N.S. Konkan, Karwar, Kakinada, Cannanore, Cuddalore, Bassein and Bimlipatam.

A beginning has been made in building smaller types of naval craft in India. Three seaward defence boats—I. N. S. Ajay, Abhay and Asshay and a morning vessel, I. N. S. Dhruvak, have already been completed.

A newly-constructed Cruiser Graving Dock at the Naval Dockyard Bombay, which can also accommodate the Navy's aircraft-carrier, was commissioned for service in January 1962. Work is fast progressing on the extention of the Ballard Pier adjacent to the present Naval Dockyard in Bombay. A New jetty is also being constructed at Visakwapatnam on the east coast.

Two New naval establishments, I.N.S. Jarawa and I. N. S. Gomantak, were Commissioned on February 15 and March 7, 1964, respectively. A Resident Naval Officers' Organisation at Port Blair in the Andaman and Nicobar Islands, I. N. S. Jarawa is equipped with necessary transport and communications facilities to enable the Naval garrison stationed there to patrol the various islands in the area. Proposed to be developed as a full-fledged naval base, I.N.S. Gomantak at Marmagoa includes the Naval Air Station at Dabolim.

Air Force

The Chief of the Air Staff is assisted by five Principal Officers controlling the main branches of the Air Headquarters, *viz*, the Vice Chief of the Air Staff, the Deputy Chief of the Air Staff, the Air Officer-in-Charge, Administration, the

Air Officer-in-Charge, Maintenance, and the air Officer-In-Charge, Policy and Plans. Each of these branches controls a group of Directorates.

Under the Air Headquarters come five major Air Force formations, namely—the Western Air, Training, Maintenance, and Eastern Air and the Central Air Commands.

In pursuance of the Reserve and Auxiliary Air Forces Act, passed by Parliament in 1952, seven Auxiliary Air Force Squadrons, namely—No. 51 (Delhi), No. 52 (Bombay), No. 53 (Madras), No. 54 (U. P.), No. 55 (Bengal), No. 56 (Orissa) and No. 57 (Punjab), have been formed. The personnel of all these squadrons are at the moment serving with the Regular Air Force.

The Air Force fleet consists of a variety of transport, fighter and bomber aircraft. Among the fighter aircraft in use are the Vampires, Toofanis, Mysteres, Hunters, Gnats and **MIG 21s.**

The transport fleet, which till a few years ago consisted mainly of Dakotas and Fairchild Packets, has been modernised and now includes Otters, An-12s, and some Caribous. The helicopter fleet consists mainly of MI 4s, Bell and Alouette-III helicopters. India-built HT-2, the T6G Texan and the Vampires are used for training purposes.

New Supersonic Interceptor Plane Being Designed

A new supersonic interceptor aircraft which will enter squadron service in the mid-70's. is now being designed by Hindustan Aeronautics Limited at Bangalore. It will be powered by an indigenous engine to be made in collaboration with the Gas Tur bine Research Establishment also located at Bangalore.

The new plane will be a successor to the H. F. 24—now being built by HAL—and it is obviously meant to fill one of the gaps in the country's air defence system which have become evident following the changed nature of the threat from China and possibly from Pakistan.

Mainly because of the conventional threat from the air, but also because of China's nuclear development and the improved delivery system that is expected to follow, it is necessary for the IAF to be equipped with an aircraft that will be able to intercept intruding hostile planes at points further away from bases in the country than is possible at present.

Though the new aircraft will also have much better navigational and radar equipment, it is being disigned principally with a view to giving it far greater range than any aircraft now in service with the IAF.

An obvious corollary of this is that the new plane will also be able to penetrate deeper into enemy territory should the need for this arise, and it will, like the H.F-24 be as versatile. In addition to its role as an interceptor the aircraft will also be used as a fighter-bomber and for providing ground support to the Army.

It is not yet known whether the improved navigational and radar equipment planned for the plane will enable it to function easily as a night interceptor. The lack of a plane equipped specially for interception at night is believed to be one of the main weaknesses of the IAF. But it is possible that work now in progress to prove the basic concepts of the new model will take this into account. It is expected that wind-tunnel tests will begin later this year.

The new plane is meant to meet part of the future requirements emerging from the long-range planning done by the IAF. Though the service is new much better equipped to meet the needs of air defence and offence, it is no secret that much remains to be done.

In fact the role to be performed by the HF-24 and its new successor aircraft is at present being carried out by the Hunter which will now presumably be replaced within a few years The Mysore is also used for giving ground support to the Army but it is meant principally for inter diction purposes.

From the point of view of the Air Force interdiction is a key phase of operations particularly in the early stages as it involves nultifying the enemy's air and other Military potential. The only other plane in use for such offensive air operations is the medium range Canberra bomber.

Most of the other jet aircraft in service with the IAF are interceptors. Including the Gnat and the MIG. although the latter can also be used as a tactical fighter bomber.

RANKS IN VARIOUS ARMS

ARMY

(i) *Non-Commissioned Ranks*

(1) Recruit, (2) Trained Sepoy, (3) Lance Naik, (4) Naik, (5) Havildar or Dafadar.

(ii) *Junior Commissioned Ranks*

(1) Jamadar, (2) Subedar or Risaldar, (3) Subedar Major.

(iii) *Commissioned Ranks*

(1) 2nd Lieutenant, (2) Lieutenant, (3) Captain, (4) Major, (5) Lieutenant-Colonel, (6) Colonel, (7) Brigadier, (8) Major-General, (9) Lieutenant-General, (10) General (11) Field Marshal.

NAVY

(1) Commissioned Officer from: Warrant Rank, (2) Sub-Lieutenant or Mate, (3) Lieutenant, (4) Lieutenant Commander, (5) Commander, (6) Captain, (7) Rear Admiral, (8) Vice-Admiral, (9) Admiral, (10) Admiral of the Fleet.

AIR FORCE

(1) Pilot, (2) Flying Officer, (3) Flying Lieutenant, (4) Squadren Leader, (5) Wing Commander, (6) Group Captain, (7) Air Commander, (8) (9) Vice-Marshal, Air Marshal, (10) Air Chief Marshal, (11) Marshal of the Air Force.

Re*cognition by Badges* (*Army*)

2nd Leiutenant	...One Star
Lieutenant	...Two Stars
Captain	...Three Stars
Major	...A State emblem
Lieut-Colonel	...A State emblem and a Star
Colonel	...A State emblem and two Stars

SOME GENERAL INFORMATION

INTERESTING GEOGRAPHICAL AND ASTRONOMICAL INFORMATION

The Solar System. The sun and the planets form the Solar system. The sun gives light and heat to all planets which are more or less spherical bodies, revolving round the sun in elliptical orbits and possessing a movement in rotation. The planets are non-luminous but shine by the reflected light.

The Sun. It is 333.442 times larger than the earth and in about 92·9 million miles away from the earth. The sun is 764,000 miles in diameter (about 109 times the earth's diameter).

The light of the sun reaches the earth in about 499 seconds. The average solar temperature is about 12,000 F.

The Moon. It, is 238,860 miles away from the earth and its surface is 14,657,000 sq. miles. Its diameter is about 2,160 miles. It completes a circuit round the earth in about 27 days, 7 hours and 43 minutes, but on account of its motion in common with the earth round the sun, the duration of the lunar month is 29 days, 12 hours and 44 minutes.

The Planets. Thesa are Mercury, Venus, Earth, Mars. Jupiter, Saturn, Uranus, Neptune, Pluto (discovered in 1930). Jupiter is the largest of the planets and Mercury, the smallest. Plnnets revolve round the sun. Besides the planets, there is a large number of minor planets called Asteroids which are invisible to the naked eye.

Number of Stars. Recent estimate is that there are about 1,600,000,000 stars out of which 7,000 stars are visible to the naked eye, and about 70,000,000 through the telescope.

	Mean distance from the sun in miles	*Mean diameter in miles*	*Revolves round the Sun in*	
Sun		88,392		
Mercury	36,000,000	3,003	88	days.
Venus	67.000,000	7,576	224.3/4	”
Earth	93,000,000	7,918	364.1/4	”
Mars	141,000,000	4,216	687	”
Jupiter	483,000,000	86,682	12	year
Saturn	886,000,000	72,372	29·9	”
Uranus	1,772,000,000	32,878	84	”
Naptune	2,793,000,000	33,932	1,638	”
Pluto	3,686,000,000	3,750	248	”
Asteroids	394,000,000 to 394‘000,000	485 and less		

Note. In a lecture delivered at Delhi University in January, 1947, Sir Harold Spencer Jones, Astronomer of Royal Society of England, said : "There are probably a thousand million separate universes each containing perhaps something like one hundred thousands stars and many more beyond our range or vision.

Constellations. Groups of stars are known as constellations. There are as many as 85 constellations known to astronomers. Among them we may mention Great Bear, Little Bear, Cassiopio, Orion, etc.

The Milky Way. A long and luminous track consisting of gaseous matter with small stars seen on dark nights along middle of the sky.

Nebulae. Luminous masses of gaseous matter seen through the telescope, either spiral or chaotic in form. Sir William Hershell and Laplace believe that the solar system was built by the condensation of nebulous matters into solid masses which became the Sun and the planets. This is known as *The Nebular Theory of the Universe.* This Theory was elaborated and modified by the late Sir James Jean.

Comets. Comets are luminous bodies moving round the Sun in highly eccentric orbits, Usually a comet contains a nucleus and enveloping haze and a long, thin tail. Some comets cover millions of miles. The appearance of those which move in elliptical orbits can be accurately predicted.

Meteors. They are small pieces of solid matter usually containing iron, chromium, nickel and magnesium which shoot through the earth's atmosphere, leaving a luminous trail behind. They are also known as 'shooting stars' although they are not really stars. Many of them fall on the earth.

Satellites. These are secondary celestial bodies which revolve round the planets just as the latter revolve round the Sun. Excepting Mercury and Venus all the other plants have their satellites. The moon is the satellite of the Earth,

Wonders of the World

1. The Pyramids of Egypt,
2. The Temple of Diana at Ephessus in Rome.
3. The Hanging Garden of Babylon.
4. Statue of Jupiter at Olympia (Greece).
5. The Tomb (Mausoleum) of Mausolos in Asia Minor,
6. Colossus of Rhodes.
7. The Lighthouse on the Island Pharoa off Alexandria.

Other Wonders

1. Te Great Wall of China, 1,259 miles in length and 17' thick and 16 ft. high on the northern frontier of the country built about 3rd century.

2. Stonehenge about 90 miles to the south-west of London, an assemblage of huge stones in three circles, one within the other 100 ft., 75 ft. and 40 ft. in diameter.

3. Taj Mahal at Agra built by Shah Jahan in 17th century.

4. Temple of Karnak in Egypt built over 3,500 years ago is in ruins now.

5. Angkor in Combodia in Viet-Nam is a ruined temple city.

6. The Porcelain Tower of Nanking.

7. Leaning Tower of Pisa (Italy).

8. The Mosque of St. Sophia at Constantinople.

9. Coliseum or Colosseum at Rome.

10. The Circus Maximus.

11. The Vatican at Rome is the largest residence in the world containing thousands of rooms.

12. The Basilica of St. Peter's is the largest church in world completed in 126 years.

Modern World

1. Wireless Telegraphy and Telephone. 2. Radio Television and Talkies. 3. Aeroplane. 4. Discovery of X-ray and Ultra violet Rays. 5. Spectrum Analysis. 6. Discovery of Radium. 7. Automobile and Locomotive. 8. Rocket-propulsion. 9. Jet propulsion. 10. Penicillin and other antibiotics. 11. Radar. 12. Atom bomb and Hydrogen Bomb. 13. Earth Satellites. 14. I.C.B.M.

THE EARTH

Dimensions of the Earth

Classification	*Area Square miles*
Superficial area	196,950,000
Water	139,481,481
Land	57,469,928
Fertile area	34,000,000
Steppes	19,000,000
Lake and river Surface	1,000,000
Desert	5,000,000
Island area	1,900,000

Classification	*Area Square miles*
Continent	
Asia	19,990,000
Africa	11,500,000
North America	85,000,000
South America	6,814,190
Polar regions	6,205,000
Europe	3,802,300
Australia	2,974,681
Oceania	4,000,000

Circumference

Equatorial (miles)	24,902
Meridinial (miles)	24,860
Diameter at equator (miles)	7,926
Diameter through poles (miles)	7,899
Average evolution of land above sea level (feet)	2,000
Length of time for rotation through 1° Long minutes	4

Average depth of Ocean below sea level (feet)	12,000
Greatest depth (ft.)	34,430
Ratio for earth's flattening at the poles I part of	297
One degree of longitude :	
Along equator (miles)	692
One degree of latitude at the equator (miles)	6,807

Mean temperature of the earth=39.5° F.

The equator passes through the following countries :—

Asia, Malaya, Archipelago Islands : Sumatra, Borneo and Moluccas.

Africa. French Equatorial Africa, Belgian Congo, Uganda, Celebes and Kenya,

S. America. Ecuador, Colombia and Brazil.

Length and Breadth of Continents

	East to West	*North and South*
Asia	6,000 miles	5,300 miles
Africa	4,500 ,,	5,000 ,,
Europe	3,330 ,,	2,400 ,,
S. America	3,200 ,,	4,600 ,,
N. America	4,000 ,,	4,900 ,,
Australia	2,500 ,,	2,000 ,,

Oceans

	Area in Sq Miles		*Greatest Depth*
Atlantic	27,800,000	27·962	off Puerto Rico Trench
Pacific	63,801,000	35·400	Swire deep off Mindanao:
Indian	28,356,000	22·968	off Sunda Trench.
Arctic	5,440,000	15·910	off North Pole.
Antarctic	4,000,000		

Average depth of Ocean below sea-level is 12,500 ft.

Mean temperature of the sea is about 39.6° Centigrade.

Surface Areas of Some Well-known Seas

Sea	*Sq. Miles*	*Sea*	*Sq. Miles*
Andaman Sea	275,000	Hudson Bay	470,000
Behring Sea	880,000	Japan Sea	400,000
Baltic Sea	160,000	Mediterranean Sea	1,145,000
Black Sea	165,000	North Sea	220,000
Caribbean Sea	1,049,000	Red Sea	169,000
Coral Sea	2,500,000	Sea of Okhotsk	580,000
Caspian Sea	169,400	South China Sea	2,300,000
East China Sea	480,000	Yellow Sea	480,000
Gulf of Mexico	720,000		

Mountains

There are 93 peaks above 24,000 ft. in height in the Himalayas and hundreds above 20,000 ft.

High Mountains (Continent-wise)

Europe	Mt. Blanc (15,781 ft)
Asia (Also world's)	Mount Everest (29,002 ft.)
Africa	Kilimanjaro (19,710 ft-)
North America	Mount McKinles (20,000 ft.
South America	Aconcagua (23,080 ft.)
Antario	Mt. Thorvald Nelson (15,400 ft.)
Australia	Mt. Kosciusco (7,352 ft)

Other High Mountains

Height in ft.	*Name of Peak*	*Continent*
28,250	K_2	Asia
28,146	Kanchenjunga	,.
26,800	Dhulagiri	”
25,250	Tirichmir in Hindu Kush	”
24,900	Minya Konka	”
18,500	Demavend	”

Chief Himalayan Peaks

Name	*Feet*	*Name*	*Feet*
Everest	29,002	Dhulagiri	26,800
K_2 (Godwin Austen)	28,250	Naga Parbat	20,620
Kanchenjunga	28,250	Nanda Devi	25,645
	27;790	Mt. Kamet	25,547

World's Other High Peaks

Peak	*Height in ft.*	*Peak*	*Height in ft.*
North America		Mt. Tocorpuri	22160
Mt. Logal	19550	Mt. Chimborazo	20700
Oizaba Peak	18300	**Europe**	
St. Elias	18000	Mt. Blanc	15750
Propocatepetl	17800	Mt. Rosa	15212
Ixtacchihuatl	17338	Matterhorn	14710
Mt. Lucania	17150	Jungfrau	13670
Mt. Foraker	17000	Pic d' Aneto	11170
Nevado de Toluca	15000	Mt. Etna	10755
Mt. Whitney	14500	**Africa**	
Mt. Ranier	14400	Mt. Kenya	17045
Mt. Shasta	14160	Tizi-n-Tamjurt	14750
Pike's Peak	14110	**Australia**	
South America		Mt. Kosciasco	7328
Ojos del Salado	22470	**Antarctica**	
Mt. Haus-caran	22180	Mt. Kirkpatric	14600

Lowest Parts of the Earth below Sea-level

Death Valley (California)	276	Libyan Desert	440
Caspian Sea, Russia	86	Lake Eyre	20
Dead Sea, Palestine	1,230	Desert of Sahara	150

Volcanoes

Sajama (Bolivia)	21,391	Mauna Loa	13,675 ft.	Hawali
Cotopaxi (Andes)	19,344	Mauna Kea	13,714 ft.	
Mt Elias (Rokies)	19,500	Hualalai	8,269 ft.	
Pu·pocotepel (Mexico)	17,833	Fujiyama, Japan (12,385 ft.)		

Vesuvius, Etna, Stromboli	Europe Tombovo in Sunda Islands.
Erebus, Terror (Australia)	Le Souffris — West Indies.
Hecla Skaptar, Jokull	Iceland
Pico de Teide (12,192 ft.)	Canary Islands.
Mt. Cameroon (13,353 ft.)	British Cameroons.

Kilimanjaro	(19,565 ft.)	Africa, in Tanganyika Territory. is now extinct.
Kluchev	(15912 ft.)	Siberia
Wrangell	(14,000 ft,)	Alaska
Katmai	(7,504 ft.)	
Lassen Park	(10,453 ft.)	California

WORLD'S IMPORTANT PLAINS

Indo Gangetic Plain. Lies south of the Himalayan mountains and stretches from the Suleiman hills in the west to Garo and Lushai hills in the east. It is 2414 km. long and 241 to 321 km. broad and alluvial plain rich in productive soil. It is one of the most densely populated plains of the world and is one of the world's granaries of wheat. It has a net work of rivers, canals, roads and railways.

Llanos. The most extensive plains or steppes in South America around the Orinoco basin. Remains desert in dry season and abounds in verdure in rainy season.

Lombardy Plains are situated around the basin or river Po in Italy. These are rich in fruits, corns and mulberry trees on which silk worms are reared.

Pampas. Large treeless grass plains of South America, ,south of the Amazon river. The largest pasture land in the world.

Parklands. Tropical grasslands with trees in Southern Sudan.

Prairies. A wide area of level, treeless graasy plains of Central North America where cattle were grazed. Now extensive wheat cultivation.

Savannah. Open treeless level tracts of grassland in subtropical and tropical Africa.

Steppes. Broad, open, temperate, grassland plains of Russia and Siberia. Very hot in summer and very cold in winter, with no rainfall. Wheat lands.

Tundras. Barren plains in North Russia, constituting a frozen or partially frozen desert, which produces only mosses and lichens by way of vegetarian.

Veltdt. Plains. Are open, treeless, grassy plateaus in Africa.

LONGEST, HIGHEST ETC.

Longest Bridges

Name	*Length*
Lower Zambese (East Africa)	over 2 miles
Storstrom (Denmark) (Longest in Europe)	,, 2 miles
Tay Bridge (Scotland)	,, 2 miles
Firth (Scotland)	1.1/2 miles
Golden Gate (U.S.A.)	,, 8,940 ft.
Sydney Harbour, Australia (the great arch itself spans 1,650)	,, 3,776 ft.
Hardinge (Bengal)	,, 5,400 ft.

N.B.—There are several other bridges which are even longer, but are partly viaducts :—

Name	*Length*
San Francisco-Oakland (U.S.A,)	8.1/2 miles
Ganda Tampa Bay	6 ,,
Littoria (Venice)	2 ,,
Sone Bridge (India)	10,050 ft.

"BIGGEST, LARGEST. GREATEST, LONGEST"

Greatest Desert	...Sahara (Africa)
Largest Palace	...Vatican (Rome)
Tallest Statue	...Statue of Liberty (New York)
Biggest Ship	...*Queen Elizabeth*, 85,000 tons
Tallest Church	...Ulm Cathedral (Germany) 529 ft. high.
Largest Diamond	...The Culliman (31061 carats)
Rainiest Place	...Cherrapunji (Assam)
Biggest and Deepest Ocean	...Pacific Ocean
Longest Corridor	...Rameswaram Temple Corridor, S. India 4000 ft. long.
Largest Church	...Church of St. Peter's (Rome)
Largest Pearl	...Beresford Home Pearl weighing 1820 grains.
Largest Railway run	...Riga to Vladivostok (6,000 miles)

Largest Telescope	...At Mt. Palomarna, California.
Biggest Museum	...British Museum (London)
Largest River (in volume)	...Amazon, S. America (flow 4,000 miles).
Longest River	...Mississipi Missouri (4,221 miles).
Largest Rly. Station	...Grand Central Terminal (New York) 47 platforms.
Largest Building	...Pyramid at Gizeh, Egypt.
Largest Royal Palace	...The Place at Madrid.
Largest single country	...Brazil 3285-319 sq. miles.
Largest Fresh Water Lake	...Superior
Largest Volcano	...Mauna Lao, Hawali.
Largest Day	...June 22.
Shortest Day	...December 22.
No Railway countries in Europe	...Iceland and Albania.
Biggest Army	...Red Army, Russia.
Largest Tree	...Giant Sequoia tree, California
Largest Salt Water Lake	...Caspian.
Longest Mountain Chain	...The Andes.
Highest Mountain Peak	...Everest (Himalayas) 29,002 ft.
Biggest Dam	...The Lioyd Dam (U.S.A)
Largest Cinema House	...Roxy ,New York
Largest Wall	...The Great Wall of China
Largest Peninsula	...India
Largest Bell	...Bell of Moscow, cast in 1733
Largest Planetary Body	...Jupiter
Biggest Railway	...Trans Siberian Railway
Biggest Park	...Yellowstone National Park (U.S.A.)
Largest Single State	...U.S.S.R. (Russia)
Largest Producer	...Mexico
Largest artificial water-way	...Grand Canal, China
Largest Cotton Port	...New Orleans (U.S.A.)
Coldest Place	...Verkhoyansk (U.S.S.R.)
Coldest Part	...Belt between Arctic and North pole

Hottest Part	...Tehad to Mecca and the Strait of Babel Mandeb.
Hottest Place (Pakistan)	...Jacobabad
Driest Place	...African Village (Chile) 11 yearly rainfall
Smallest Continent	...Australia
Deepest Lake	...Lake Baikal (C. Asia)
Fastest Planet	...Mercury (29. 3/4 miles a second)
Nearest Planet	...Venus
Oldest British Colony	...Newfoundland
Highest Plateau	...Pamir, Tibet
Greatest Pork Market	...Cincinnati
Finest Harbour	...Sydney Harbour
Richest Lowland Plain	...China's Great Plain
Smallest Planet	...Mercury
Largest and most populous Continent	...Asia
Most Populous Country	...China
Highest Town	...Pasco (Peru), alt. 14,280 ft.
Biggest Library	...National Kiev Library 70,97,000 vols. (U.S.S.R.)

TRADE NAMES AND THEIR ASSOCIATIONS

Agfa	Photo goods
Ambassador	Cars
Alert	Blades
Ashoka	Blades
Britannia	Bread, Biscuits
Bata	Shoes
Bayer	Medicines
Beck's	Beer
Cheverolat	Cars
Colt	Revolvers
Crook's	Glass goggles, spectacles
Dalda	Ghee
Deterdin	Petroleum
	Steel
Edsu	Fabrics
Big Ben	Alarm time-piece
Black Bird	Fountain Pen
Blackstone	Oil Engines
Brook Bond	Tea
Coates	Gin
B. S. A.	Bicycle, Gun
Kodak	Film and photographic goods
Lalimli	Woolen Textiles

Davy	Safty Lamp
Dhariwal	Textiles
Ditma	Lantern
Dunlop	Tyre
Dayalbag	Leather, Dairy
Erasmic	Blades
Exshaw	Brandy
Faraday	Electricity
Fireston	Motor Tyres
Flex	Shoes
Flit	Mosquito Killer
Ford	Motors
Fry's	Coca, Chocolates
Gillette	Safety Razor
Glaxo	Baby food, Biscuits Glucose D
Godrej	Soaps, Safes
Goodlass	Paint, varnishes and enamel
Good Year	Motor tyres
Haig and Buchnan	Whisky
Hall's	Wine
Hamam	Soap
Horlick's	Malted Milk
Horrackses	Coot Textiles
Huntley and Palmer	Biscuits
Java	Sugar
Kelley	Directories
Lifebuoy	Soap

Lipton	Tea
Shell	Petrol
Swan	Ink
Surf	Soap
Tata	Iron and Steel
Tennets	Beer
Titaghur	Paper
Thomas Cook	Shipping
Underwood	Typewriters
Mangharam	Biscuits, Toffees, etc.
Merck	Medicines
Muree	Beer
Panama	Cigarettes
Park Davis	Medicines
Parker	Fountain Pen
Pears	Soap, EncyClopaedia
Philips	Radios, Bulbs etc.
Players	Cigarettes
Polson's	Coffee, Butter
Pond	Face Creams
Ovaltine	Energy Food
Kanti	Toilet Soap
Red Ensign	Coffee, Tea
Remington	Typewriter
Rip	Blades
Robey and Lincoln	Oil Engines
Rogers	Knives, forks

Lux	Soap
Shalimar	Paints
Serampur	Paper
Sheffield	Cutlery
Scissors	Cigarettes
Waterman	Fountain Inks
White House	Whisky
Will's	Cigarettes
Yule	Engineering
Rolls Royce	Cars
Rowntress	Cocoa, Toffee Chocolates
Schering	Medicines
Zeal	Thermometer
Ziss-Ikon	Lenses Cameras

PLACES OF GEOGRAPHICAL, LITERARY, HISTORICAL AND MILITARY IMPORTANCE

Abadan. Centre of the oil industry of Iran.

Abu Mount. An isolated granite peak of the Aravali range on the border between Gujarat State (into which it has been incorporated) and Rajasthan. One of the most sacred centres of Jain worship.

Accra. Capital of Ghana in Africa. Scene of a military coup on Feb. 24, 1966.

Aden. On the Arabian coast at the southern entrance to the Red Sea; fortified British seaport and coaling station (p. 48,090).

Aijal. The headquarters of Mizo Hills in Assam.

Ajanta. In Hyderabad (A.P.) known for ancient caves and sculpture work.

Algiers. Capital of Algeria. Coup led by Col. Boumedinne was staged here (1965).

Amritsar. Border town of Punjab. Contains the famous Golden Temple of the Sikhs.

Asansol. Centre of coal industry in Bengal. The great Chittaranjan Locomotive Work has been built near here.

Baghdad. Famous city and capital of Iraq, situated on the Tigris. Formerly capital of the Saracenic Empire. Figured in the World War. On the London-Karachi air route. Occupied by the Allies in 1941.

Banglore. Seat of the Government of the Mysore State. Silk factories ; also newly established Aircraft Manufacturing Factory and the Indian Telephone Industries (I.T.I.), Indian Institute of Science, Machine Tool Factory etc.

Bangkok. Capital of Siam. Shipping industry. Good port.

Bastar. Formerly a princely state which, after partition of the country merged with Madhya Pradesh. (Area 15,000 sq. miles, Population 1,200,000, a majority of them being *adivasis*. The capital of the state is Jagdalpur, Pravin Chandra Bhanjdeo, its erstwhile ruler with a large number of adivasis was shot dead in the palace on March 26, 1966. This incident created much storm in the country.

Bhutan. In Eastern Himalayas. Independent State, but under Government of India's protection.

Barauni. In Bihar, has come into the news for its oil refinery.

Brindisi. City of Italy. Port. Falls on the air route and sea-route to the East. Important railway terminus.

Brioni. Island in Yugoslavia. Known for its great scenic beauty.

Darjeeling. Hill station and summer capital of West Bengal. Health resort and tea gardens.

Deoghar. Town in Bihar, well known for the Baidyanath temple where Gandhiji in 1931 and Vinoba Bhave in 1953 were assaulted by the "Pandas".

Dhanbad. Town ef Bihar, on the Jharia coalfield. School of Mines.

Dhori. A mining centre near Dhanbad.

Elephanta. Island in Bombay Harbour. Wonderful cave sculpture.

Ellora. Near Hyderabad (A.P.) Noted for its sculptured cave temples.

Gilgit. In Kashmir, commanding the passes of the Hindukush. Now in the occupation of Pakistan.

Glassgow. Second largest city of the Great Britain. Premier shipbuilding and manufacturing centre in Scotland.

Haji Pir. A high mountain-pass in the Uri Poonch sector in Kashmir. Came in the news in 1965 Indo-Pak Conflict.

Hanoi. Capital of North Vietnam. It is in the news because of the conflict in Vietnam.

Harappa. Town in the Montgomery district in Pakistan. Famous for its excavations of Indus Valley Civilization.

Havana. The Capital of Cuba.

Hawaii. Island in the centre of the Pacific. Port on Japan-America sea-route.

Hiroshima. Seaport of Japan. First city to be destroyed by atom bomb. (August 1945).

Hollywood. Town of California (U.S.A.). Chief centre of motion picture industry.

Hong Kong. British Island of China and a piece of land opposite the mainland called Kowloon. One of the largest port of the world. Naval station strongly fortified. Air centre, under Japanese occupation during 1944-45.

Jharia. A busy town in the coalfield of the same name in Bihar.

Joginder Nagar. In Mandi State. Hydro-electric station.

Kanchenjunga. World's third highest mountain situated in the Himalayas near the boundaries of Nepal and Sikkim, Highest peak, 28,150 feet.

Ladakh. Province of the upper Indus, Kashmir, India. Great trading centre. The most elevated inhabited country of the world

Nalanda. City in Bihar State, famous in ancient times as the seat of a big university to which scholars from different parts of the world were drawn.

Nagarjuna Sagar (Andhra Pradesh). The multi-purpose project at Nagarjunasagar in Andhra Pradesh is one of the major river valley schemes in the country. The construction of the Dam is now complete. The reservoir has a storage capacity of 67.06 lakh cubic metres and its water spread will be 19,078 hectares. The estimated cost is Rs. 139.53 crores.

Panama. Town of Central American Republic. Near Pacific, terminus of famous Panama Canal.

Pearl Harbour. U. S. Pacific Naval base in Oahu. Chief of the Hawaiian Island and scene of a Japanese attach on Dec. 7,1941.

Peking (Formerly Peiping). Capital of the People's Republic of China.

Perambur. Suburb of Madras contains the assembly shop of India's Integral Coach Factory.

Pimpri. Near Poona. Has the newly built penicillin factory.

Pusa. (In Bihar). Has a big Agricultural Research Institute.

Rangoon. Capital and principal seaport of Burma. Contains the central shrine of Burmese religion, the Shwedagon Pagoda. Freed from Japanese occupation in 1945.

Raniganj Famous for coal mines in Bengal, India.

Roorkee. Town in Uttar Pradesh. Site of the Roorkee Engineering College. now converted into a university.

Saigon. Capital of South Viet-Nam.

Sevagram. A village near Wardha where Mahatma Gandhi lived.

Sanchi. A village in Bhopal State, of M. P. Has the largest and best preserved Buddhist stupa in India (108 ft. in diameter and 24 ft. high). The remains of Sariputta and Mahamodgallayana two disciples of the Buddha, were. reinterred here in 1952.

Sarnath. Near Varanasi, known for Buddhist temples and remains. It was in the Deer Park of Sarnath that the Buddha gave his first discourse. It was here that the five disciples joined him, who proved to be the nucleus of Buddhist Church or Order.

Shanghai. Largest sea-port of China.

Shantivan. Near Rajghat, Delhi is the place where Jawahar Lal Nehru was cremated on 27-5-64.

Shillong. Summer Capital of Assam. Gorkha Cantonment. Health resort.

Shiraz. City of Persia. Birth place of poets Saadi and Hafiz. Named for wine.

Sikandra. Town near Agra, famous as containing the mausoleum of Akbar.

Sikkim. State adjoining Tibet, Nepal and Bhutan. (2.818 sq. m.).

Sindri. Town situated about 18 miles west of Dhanbad in. which the great Sindri Fertilizer Factory—the biggest of its kind in Asia—has been set up.

Singapore. Island of greatest strategic importance. Here a dockyard was recently constructed. Became a sovereign independent nation in 1965.

Taxila. Town in N. W. Punjab. Famous for the excavations by Sir John Marshall. Old seat of Buddhist culture.

Tel-Aviv. Manufacturing city in Palestine built up by Jewish enterprise.

Tashkent. Capital of Uzbekistan in the U.S.S.R. Was the scene of Indo-Pak agreement under the good offices of Alexie Kosygin, the Prime Minister of U.S.S.R. (10·1-66). Shri Lal Bahadur Shastri, the Prime Minister of India passed away on the night of 10th January due to an heart attack. But the agreement had already been signed.

Tokyo. Capital of Japan. Biggest commercial centre. Bombed by the Americans in 1942. Greatly damaged by superfortress raids.

Udaipur. Famous town in Rajasthan, birth place of Maharana Pratap and the cradle of Rajput chivarly. Contains the famous Chittor fort and the Tower of Victory built by Rana Kumbha near here.

Vijyaghat. The place near Rajghat Delhi where Shree Lal Bahadur Shastri was cremated on 11-1-66.

Vshwa Bharti or Shantiniketan. Or the "Abode of Peace." The famous international university built near Calcutta by Ravindra Nath Tagore, the great poet and dramatist.

Wardha. Town in M.P. Mahatma Gandhi usually resided here. Associated with the Wardha Scheme of Education.

Warsaw. Capital of Poland. Large Jiwish colony. Important wool manufactures. Liberated from the Germans in 4944.

Waterloo. Village of Belgium. Here Napoleon was finally defeated in 1815.

Westminster. City and Borough of London. House of Parliament, St. James and Bukingham Palace.

THE UNITED NATIONS

Ever since the end of the First World War, statesmen of the world have felt the need for the creation of an international organization which would ensure peace in the world. The League of Nations was created after the First World War with this purpose in view but it failed to reflect the power position in world politics and hence became ineffective with the passage of time. With the end of the Second World War, the urge for a world organisation became stronger and the Allied powers decided as early as in October 1944 to create a stronger organization than the League. A conference was held at San Francisco from April 25 to June 26, 1945. This conference was called the United Nations Conference and was attended by 50 countries. The United Nations Charter was signed on June 26, 1945, and the United Nations formally came into existence on October 25, 1945.

THE PRINCIPAL ORGANS OF THE UNITED NATIONS

The principal organs of the United Nations are (1) the General Assembly, (2) the Security Council, (3) the Economic and Social Council, (4) the Trusteeship Council, (5) the International Court of Justice, and (6) the Secretariat.

The General Assembly consists of all the members of the United Nations and each member is entitled to one vote. The Assembly meets once in a year unless a special session is convened by the majority of the members. The General Assembly carries out its work with the help of seven committees, on each of which every member is represented. The committees are (1) Political and Security, (2) Economic and Financial, (3) Social, Humanitarian and Cultural, (4) Trusteeship, (5) Administration and Budgetary, (6) Legal and (7) Special Political Committee. The General Assembly has to discuss any matter within the scope of the Charter and make recommendations on any such matters. For decision on important matters, a 2/3rd majority is required ; on other questions the simple majority of members is enough. The General Assembly has to receive and consider reports from other organs of the United Nations, including the Security Council.

The Security Council consists of eleven members, each of which has one representative and one vote. There are five permanent members—China, France, U. S. A., U. S. S. R. and U.K—and six non-permanent members elected for a two-year term by the 2/3rd majority of the General Assembly. The retiring members are not eligible for immediate re-election. Whenever the Security Council is to discuss a subject which concerns directly any of the member nations of the United Nations which is not represented in the Security Council; it is to invite the country concerned to participate, without vote, in the discussions. The Security Council was originally envisaged to be the most important organ of the United Nations. It bears the primary responsibility for the maintenance of peace and security and it can call armed force assistance and facilities of the member states in order to meet situations created by aggression or threat of aggression. The idea in making five members permanent out of the eleven in the Council was that these big five nations would continue to guide or control the main factors in international politics and hence the council would have either to have their unanimous support behind any proposal for action in the name of the world organization or not have such action at all. In the last few years, the Soviet Union has on a number of occasions used its veto and this had resulted in a demand for revision of the U.N. Charter. However, the greatest weaknesses of the

Security Council today arise from other factors. In the first place, China has ceased for all purposes to become a member of the Council just when it has for the first time become a great power. This is a situation which is yet to be taken note of. Secondly, in international politics of today, the big powers are by no means free to act or manipulate as they were in the earlier years of the century. The very growth of an uncommitted bloc of nations is an important fact which is not reflected in the present structure of the Secutity Council. Thirdly, the world has reached a stage when the problems of peace are not merely the problems created by threat of armed conflict. More important is the consideration of the basic problems and the Charter has reserved that right for the General Assembly. It can, therefore, be safely said that the Security Council gradually is losing its importance.

The Economic and Social Council is responsible for carrying out the functions of the United Nations with regard to international, economic, social, cultural, educational, health and other matters. The Council is composed of representatives of eighteen member states elected by a 2/3rd majority of the General Assembly. Six are elected each year for three-year term. Retiring members are eligible for re-electsyn. The Council holds at least two sessions a year. It also functions through commissions and standing committees. Apart from this the UNICEF, i. e., the United Nations International Children's Emergency Fund, also functions undar the supervisinn and guidance of the Economic and Social Council.

The Trusteeship Council assists the General Assembly in carrying out its functions in relation to the trust areas and territories. This council is primarily meant to look after the interests of the non-self governing trust territories and facilitate the emergence of these areas to freedom. The trusteeship Council consists of members who are administering the trust territorios (Australia, Belgium, New Zealand, U.K. and U.S.A. the permanant members of the Security Council who do not have trust territories (France and U. S. S. R.) and eight members elected for three year term by the General Assembly

This is to ensure that the total membership of the Council is equally divided between these members of the United Nations which administer trust territories and those which do not.

The International Court of Justice is composed of a body of independent Jud ges elected regardless of their nationalities among persons of high moral character, who possess the qualifications required for their respective countries for appointment to the highest judicial offices or are authorities on International Law. There are fifteen judges but not more than one from one country. The judges are elected by the Security Council and the General Assembly and sit independently. Only states may be parties in cases before the Court. The Court exercises its jurisdiction in all cases which the parties refer to it and in all matters provided for in the Charter or Treaties and Conventions in force. If there is no judge on the bench of the nationality of the parties to the dispute, each party has the right to choose a judge, Such judges shall take part in the decisions on terms of complete equality with their colleagues.

The Secretariat is composed of the Secretary-General, who is the chief administrative officer of the U. N. and an international staff appointed by him under the regulations established by the General Assembly. The first Secretary-General was Trygve Lie who served up to 1953. The second was Dag Hammarskjold of Sweden as the Secretary-General (1953-61). The present Secretary General is U. Thant.

The United Nations has now a membership of 122 states.

SPECIALIZED AGENCIES

1. Internationl Atomic Energy Agency, (I.A.E .A). It functions with the purpose of enlarging the contribution of atomic energy to peace and prosperity throughout the world and to ensure that it is not used for furthering military purposes.

2. International Labour Organization (I.L.O.). The function of this body is the formulation of international standards in the form of international labour conventions and recommendations,

3. Food and Agriculture Orgnization (F. A. O.). This body reviews the food and agriculture conditions in the world and supplies member governments with facts and figures etc., relating to nutrition, production, trade and consumption of agricultural products including fishery and forestry.

4. United Nations Educational, Scientific and Cultural Organization (UNESCO). The purpose of this body is to contribute to peace and security by promoting collaboration among nations through education, science and culture in order to further universal respect for justice, for the rule of law, and for the human rights and fundamental freedoms.

5. World Health Organization (W. H. O.). The objective of this body is the attainment by all peoples the highest level of health being defined as "a state of complete physical mental and social well-being and not merely the absence of disease or infirmity.

6. International Monetary Fund (I.M.F.). This organization functions to promote international monetary co-operation and exchange stability. It also assists in the removal of exchange restrictions.

7. International Bank for Reconstruction and Development (The World Bank). Its purpose is to provide and facilitate international investment for increasing production, raising living standards and helping to bring about a better balance in world trade.

8. International Finance Corporation (I.F.C.). The Corporation, an affiliate of the World Bank was established in July, 1956. I.F.C's purposes are to assist private industrial enterprises in the territories of less developed member countries, to stimulate the international flow of private capital and to broaden the development of local markets.

9. International Civil Aviation Organization (I.C.A.O.). It assists international civil aviation by encouraging use of safety measures uniform regulations for operation, simpler procedures at borders etc., and promotes use of new technical methods and equipment.

10. Universal Postal Union (U.P.U.). The aim of the U.P.U. is to assure the organization and perfection of the various postal services and to promote, in this field, the development of international collaboration.

11. International Telecommunication Union (I.T.U.). The I.T.U. (1) allocates radio frequencies and registers radio-frequency assignments, (2) seeks to establish the lwoest rates possible consistent with efficient service and taking into account the necessity for keeping the independent financial administration of telecommunication on a sound basis, (3) promotes the adoption of measures for ensuring the safety of life through telecommunication and (4) makes studies and recommendations and collects and publishes information for the benefit of its members.

12. World Meteorological Organization (W.M.O.). Functions: (1) To promote international co-operation in the field of meteorology and quick exchange of weather data; (2) to establish world-wide net works of meteorological stations and facilitate the publication and standardization of their observation; (3) to further the application of meteorology activities (4) to encourage research and training in the field of metreology.

13. Inter Government Maritime Consultative Organization (I. M. C. O.). Functions: To provide machinery; for co-operation among governments in the field of governmental regulations and practices relating to technical matters including those concerning safety of life at sea; to encourage the removal of discriminatory actions by Governments; to provide for exchange of information among governments on matters under consideration by the organization.

14. International Trade Organization (I. T. O.) General Agreement on Tariffs and Trade (G. A. T. T.) Functions: The G.A.T.T. provides machinery for reducing and stabilizing tarriffs and the opportunity for regular consultation on trade problems. Other objectives comprise arrangements for access to world market for agricultural and food products, the reductions of non-tarriff barriers and the benefits to be obtained by less-developed countries.

15. **United Nations International Children Emergency Fund (UNICEF).** An inter-governmental organization concerned with children's welfare, established since 1946. It has its birth from a common humanitarian urge to wipe out or prevent those iseases which usually effect children. So far it has helped about 50 nations to launch sanitation projects. India has received so far Rs. 76 crores worth assistance in the form of equipment for health centres, hospitals, public health laboratories, poultry and fishing farms- The Nobel Peace Prize for 1965 was awarded to UNICEF.

16. **Technical Assistance Administration (TAA).** It provides technical assistance and technical know-how to less developed countries. Experts in different fields viz agriculture engineering, public health drawn frem about seventy countries visit less developed countries.

The General Assembly has provided special fund for this agency.

17. **Economic Commission for Asia and Far East, (ECAFE) Headquarters : Bangkok.** It is one of the specialised regional commissions of the Economic and Social Council of the U. N. The main objective of this agency is to foster economic development of Asia and Far East countries by promoting better social, economic, educational and health conditions in the countries of this region.

MEMBERS OF THE UNITED NATIONS

Afghanistan
Albania
Algeria
Argentina
Austria
Australia
Barbados
Belgium
Bolivia
Botswana
Brazil
Bulgaria
Burma
Burundi
Byelorussia
Cambodia
Canada
Cameroon
Central African Republic
Ceylon
Chad
Chile
Congo (Leopoldvil)
China (Taiwan)

Colombia
Congo (Brazville)
Costa Rica
Cuba
Cyprus
Czechoslovakia
Dahomey
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Gabon
Ghana
Greece
Guatemala
Guyana
Haiti
Honduras
Hungary
Iceland
India
Indonesia
Israel
Iraq
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Italy
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Kuwait
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Liberia
Libya
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Malta
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Nepal
Netherlands
New Zealand
Nicaragua
Niger
Nigeria
Norway
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Pakistan
Panama
Paraguay
Peru
Philippines
Poland
Portugal
Ruanda
Rumania
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Sierra Leon
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Sudan
Sweeden
Syria
Tanzania
Thailand
Tobago
Togo
Trinidad

Tunisia
Turkey
U.A.R.
Uganda
U.S.S.R.
United Kingdom
United States
Uruguay
Upper Volta
Ukranian S.S.R.
Venezuela
Yemen
Yogoslavia
Zanzibar
Zambia

Non-members of the United Nations

(1) People's Republic of China.
(2) West Germany.
(3) East Germany.
(4) North and South Korea.
(5) Switzerland—not joined of her own free will.
(6) North Vietnam.
(7) South Vietnam.

FLAGS OF DIFFERENT COUNTRIES

United Nations. White U. N. emblem ; global map projected from the North Pole and embraced in twin olive branches centred on a rectangular blue banner.

India. A tri-colour flag of saffron, white and green with a blue *Chakra* (wheel) in the centre.

Pakistan. Dark green with a white vertical bar at the mast, the green portion bearing a white Crescent in the centre and a five pointed heraldic star.

U. S. S. R. Red ground with hammer and sickle below ffve-pointed star in upper corner flag staff.

United Kingdom. The heralded cross upon which lies the red and white cross-and upon the whole rests the red and white cross dividing the flag vertically and horizontally.

U. S. A. 13 stripes and 50 stars.

France. The 'tri-colour'—three vertical bands—blue, white and red. The blue is next to flag staff.

Portugal. Green and red with arms in centre.

Turkey. Red with white crescent and star.

Japan. White charged with rising sun (red).

MEASUREMENT UNITS

Angstorm—for measuring liquids,.

Barrel—for measuring length of light waves.

Bale—cotton is weighed in bales.

Cable—for measuring length of cables. It is about 600 ft. in length.

Carat (c)—used for measuring precious stones. It is also a measure for the purity of gold alloy.

Fathom—it is used for measuring depth of water. One fathom is equal to 5 feet.

Hand—is used for measuring the height of the horse. One hand is equal to 4 inches.

Hogshead—used for measuring wine.

Horse power—used for measuring the power of petrol or steam engine.

Knot—for measuring speed of ships.

Light year—for measuring interstellar space. Light travels at the rate of 186,000 miles per second.

Ream—used for measuring paper. A ream contains 480 or 500 sheets of paper.

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SCIENCE

WORLD'S FAMOUS SCIENTISTS AND THEIR CONTRIBUTIONS

✓ **Ampere, Andre Marie** (1775–1836). French. He was the first to express the relation between the direction of a current in a conductor and the direction of the lines of force. He was also distinguished for his discoveries in electro-dynamics and magnetism and the influence of these on electro-telegraphy.

Anderson Carl David (1905–). American. He is well known for his extensive researches on cosmic rays. Meson or the Fundamental particle of matter, also once called mesotron, was discovered by Anderson in 1936, in cosmic rays. Received the Nobel Prize in 1936.

Angstrom, Anders Jonas (1814–74). A distinguished Swedish physicist who did notable work in spectroscopy and solar physics. In his honour and after him is named the Angstrom unit, used to express the wave length of electro-magnetic radiations (light, radiant heat, X-rays). One Angstrom unit is one-ten thousandth of a micron (a micron being one millionth of a meter.)

Appleton, Sir Edward Victor (1892–). British physicist; won in 1947 Nobel Prize for studies in ionosphere which led to the development of radar. He developed the British radar system.

✓ **Archimedes** (287–212 B. C.) *of Syracuse*. The greatest mathematician of antiquity. He discoverd the relationship between buoyancy and displacement of fluids (Archimedes Principle), He also discovered the laws of the lever. He is also inventor of the Archimedes' screw consisting of a revolving spiral in a cylindrical base for raising water.

Arkright, Sir Richard (1732–1792). English. Inventor and Manufacturing pioneer who invented the spinning frame and helped to bring about the Industrial Revolution.

Arrhenius, Svante August (1859–1927). Swedish. He originated the theory of the electrolytic dissociation, which laid the foundation of modern Physical Chemistry.

Avogadro (1776–1856). Italian scientist who advanced the hypothesis that at the same temperature and pressure equal volumes of different gases contain equal number of molecules.

Bacon, Roger (1214–1292). English. He is one of the most original and bold thinker of the Middle Ages. Led to modern system of scientific research by attempting to prove every scientific statement by experiment. He is the first man who suggested such inventions as the telescope, the air pump, the diving bell, the camera obscura and gun powder ; contributed immensely to the general advancement of scientific thoughts.

Baer, Karl Ernst Von (1792–1826) German. Great German Zoologist, who laid the foundations of comparative embroylogy.

Baird, John Logie (1888–1946) Scotch. To Baird goes the honour of inventing Television, which is the world's modern wonder.

Banting, Frederick G. (1891-1941) Canadian. He, along with Prof. Macleod, Dr. Best and others discovered method of isolating insulin, a hormone from the pancrease of animals. His discoveries thus enabled millions of patients suffering from diabetes to live normal lives.

Beufort, Admiral Sir Francis (1774–1857). English, Invented the Beaufort scale, a system of recording wind velocity. Devised in 1806, it received international recognition in 1874.

Becquerel .Antoine Henry (1852–1908), French. Becquerel is renowned for his discovery in 1896 of the *Becpuerel rays* the first indications of radio-activity.

Behring, Emil Von (1854–1917). German. Developed an antitoxin to prevent and cure diptheria. The Serum he invented makes persons immune to this fell disease.

Bell, Alexander Grahm (1847–1922). American (U. S. A.). He invented the telephone and photophane and devised improvements in the phonograph.

Bessember, Sir Henry (1813–97). Inventor of the Bessemer process for converting molten pig iron into steel. The process revolutionised the iron and steel trade.

Blakett, Patrick Maynard Stuart (1897.) English. Many discoveries in nuclear physics stand to his credit.

Bose, Sir Jagdish Chandra (1858–1937). Indian. Sir Jagdish showed to an astonished world that plants respond to electrical stimuuli like living beings, and have nervous system in them. He also invented the Crescograph, a device for measuring the plant growth.

Niele, Bohr Prof. Danish nuclear physicist and winner of the Nobel Prize for Physics in 1933. He has become the first winner of the "Atoms for Peace', Award. The award established in 1955 through a grant by the Ford Motor Co., grew out of President Eisenhower's appeal at the Geneva Conference for an international effort in the development of nuclear energy for peaceful uses. Prof. Bohr 71 , one of the founders of modern atomic theory, won the Nobel Prize for theoretical work on the structure of the atom and the basic concept of quantum physics. During World War II, he worked on the atom bomb at Los Alamos, New Mexico.

Boyle, Robert (1627–91). Irish. He discovered the elasticity of air, and in 1662 enunciated the famous *Boyle's Law*, that the volume of a gas varies inversely with its pressure.

Bensen, Robert Wilhelm (1811–1899). German. He is credited with the invention of the Bunsen burner. He also invented the charcoal pile, the magnesium light and founded the study of spectrum analysis.

Burbank, Luther (1849–1926). American (U. S. A.). He produced new fruits and vegetables by applying laws of heredity to plants. Known as the wizard of the plant kingdom.

Coulomb, Charles Auguste de [1736-1806]. French scientist who invented the torsion balance for measuring the force of electric and magnetic attraction, and which goes by his name.

Count Rumford (1753-1844). American. He observed that heat was produced by mechanical energy in the boring of a cannon, thus proving that heat is not matter, but a form of energy.

Crompton Samuel. British inventor who improved weaving methods, especially by the spinning "mule", combining features of Hargreave's spinning Jenny with Arkwrights frame.

Curie, Marie Sklodowska (1868-1934). Polish. She is famous for her researches in radio-activity. She first separated and isolated the element radium, with Pieree Curie; and discovered the element polonium.

Daimler, Gottileb (1834-1900). German. Motor-pioneer. In 1886, Daimler produced the first "motor vehicle" and a motor bicycle. He is also credited with the original invention of the internal combustion engine.

Dalton, John (1766-1844). English. He is remembered for formulating the atomic theory of chemical composition.

Darwin, Charles (1809-1882). English. Darwin is the founder of the modern theory of evolution.

Davy, Sir Humphrey (1778-1829). English. He invented the arc light and the Davy Safety Lamp.

Forest, Lee De (1873-). American. Invented the audion bulb which made possible radio transmission and reception.

Descartes, Rene (1596-1650). French. Descartes is regarded as the discoveror of Analytical Geometry and the founder of the science of optics.

Dewar Sir James (1842-1923). British chemist. He specialized on the properties of matter at low temperatures. He was the first to liquify hydrogen (1898) and to solidify it (1899). He devised the **Dflask**, forerunner of modern Thermos bottle.

Diesel, Rudolf (1858-1913).. German. He is the inventor of the well known engine that uses heavy liquids and goes by his name.

Dunlop, John Boyd (1840-1921). Scotch. He is the inventor of the Pneumatic rubber-tyres.

Edison, Alva (1840-1931). American. One of the most inventive genius the world has produced. Invented the phonograph, the incandescent electric lamp, multiplex telegraphy, moving picture camera. More than 1000 (including minor and major) inventions are to his credit.

Eckener, Dr. Hugo Van. Famous German Aeronaut and engineer. Designer and commander of the Graf Zepplin in all her flights. Regarded as the greatest authority in the world on dirigibles.

Eddington, Prof. Sir Arthur Stanley (1882-1944). English. Celebrated modern astronomer and physicist. He did work of the highest importance in regard to the motion and equilibrium of stars, their luminosity and atomic structure.

Ehrilich, Paul (1854-1915). German. His most famous invention is Salversan—an arsenic preparation—treatment of the most dreaded of diseases, *i.e.*, syphilis, which gives so excruciating a pain to the patient.

Einstein, Albert (1879-1955). German-Swiss Jew. Famous for his framing the Theory of Relativity.

Fahrenheit, Gabriel (1686-1736). German. He designed the thermometer scale bearing his name and made the first mercury thermometer.

Faraday, Michael (1791-1867). English. Discovered electro-magnetic induction, which resulted in the development of the first electric generator. Built the first dynamo. Also, in chemistry he made many notable discoveries, *e. g.*, the liquifaction of chlorine.

Ferrel, William (1817-91). American meteorologist ; who formulated the well-known Ferrel's Law ; that because of the earth's rotation, moving bodies (like winds and ocean currents) are deflected to right in the northern hemisphere, and to the left in the southern hemisphere, and that the unt varies with velocity of motion and latitude (it is zero he equator and greatest at the poles).

Fischer, Hans (1881-1945), German chemist, who disco- ed the red colouring matter in blood.

Fleming, Sir John Ambrose (1849-1945). English. Sir ming is famous for his researches in electrical engineering, particularly in connection with wireless telegraphy, telephony, and electric light. He was the inventor of the thermionic valve and thus helped in the development of the radio.

✓ **Fleming, Sir Alexander** (1881-1955). English. He was one of the foremost of bacteriologists. He discovered penicillin, the wonder drug of our age. Produced the famous antibiotic from the mould, penicillium dotatum.

Forbes, George (1849-1936). British physicist who perfected a novel range finder, the carbon brush used in dynamos and electric motors.

Flory, Sir Howard Walter (1898-). English. He along with Sir Alexandar Fleming, discovered penicillin, the antibiotic.

✓ **Franklin, Benjamin** (1706-1790). American. Franklin proved that lightning is electricity. He also invented the lightning rod.

Fraunhofer, Joseph Von (1787-1826). German. The dark lines in the solar spectrum (called the Fraunhofer lines) that revealed the chemical compositions of the sun's atmosphere, were first accurately mapped by him. He also improved optical glass and made prisms from it that could produce much better spectra than any previous make.

✓ **Foucult** (1819-68). French. Noted for his determining the velocities of light in air, water and vacuum. He demonstrated in 1850 that light travels more slowly in water than in air—the ratio of the velocities equals the ratio of the indexes of refraction. He is also noted for his work on electro magnetic fields, but most of all for Foucult pendulum, which by consistently bearing to the right, proves that the earth is rotating.

Galen (130-200 A.D.). Greek. Earliest man to demonstrate the action of the heart. Taught that blood flowed in the arteries and veins.

Galilei, Galileo (1564-1642). Italian. Known as the father of experimental science, his discoveries and inventions are among the most important ever made. He discovered the laws of (1) freely falling bodies (2) the pendulum. He made the first air thermometer and astronomical telescope. He is also credited with the invention of the hydrostatic balance.

Galvani, Lugui (1737–98). Italian physician. He is remembered for observing contraction of a dead frog's legs when touched with metal. He made an arc of two different metals and used it to cause muscle contraction. He held that tissue was the electricity source, while Volta said it was the arc. Anyway; he is said to have first discovered the galvanic or voltaic electricity in 1762.

Gay Lussac. (1778–1850). French chemist. He is best known for the Gay Lussac Law which states that the volume of a gaseous compound is equal to or is less than and has a simple ratio to the sum of the volumes of gases combined.

Gilbert, Wiiliam. (1540–1603) English. He was the first to state that the earth is a great magnet.

Gorgas, William C. (1854–1920). American. Military doctor who discovered that yellow fever is caused by the bite of a mosquito and by his discovery helped in clearing the Panama Canal of Malaria ann made it possible for the digging of the canal. This work had been held up for many years as labour fell like fleas and there seemed to be no remedy for it.

Gauss,Karl Fredrich (1777–1855). German mathematician and physicist. Even in his boyhood he was an outstanding prodigy and genius. He was the first mathematician to introduce rigour in his proofs. He contributed to topology, astronomy and physics, and did original work in the field of non-Euclidian geometry. The Gauss unit of intensity of the magnetic field, is named in his honour.

Graham, Thomas (1805–69). Scottish chemist. His name is associated with the **Graham's Law**, which states that the rate of diffusion of a gas is inversely proportional to the square root of density.

Guericke, Otto Van (1602–86). German physician who invented the vacuum pump in 1654. He performed the famous experiment in which teams of horses could not pull apart two hollow hemispheres that had been put together and exhausted. He also invented an hygrometer and an electrostatic machine.

Gay Lussac, Joseph Louis (1778–1850). French physicist and chemist. Best known for his law concerning the combining volumes of gases. Produced new methods of producing sulphuric and oxalic acids.

Haber. Fritz (1868–1934). German. This well-known German chemist did much work on gases. The preparation of synthetic ammonia (Industrial) chemical process for the large scale manufacture of ammonia from atmospheric nitrogen is termed after him, as the Haber Process, and nitrobenzene. In the Great War he devised gas masks.

Hailey, Edmund (1656–1742). English. Famous astronomer remembered as having observed the comet (known after him) in 1682 and for accurately predicting in 1704 that it would reapear in 1759, which it did.

Hahn, Otto (1879–). German physical chemist. Discovered the radio-active element protactinium. But more important than this is his obtaining evidence of nuclear fission of uranium by bombarding it with neutrons.

Harrison, John (1693–1776) British inventor, known for his work in the measurement of time. He devised a temperture compensated pendulum.

✓**Harvey, William** (1578–1656). English. This celebrated English physician rediscovered the fact that blood circulates through arteries and veins and passes through capillaries after the ancient work of Galen had been forgotten.

Helmholtz, Herman Von (1821–1894). German. This eminent German scientist published in 1847 the epoch making treatise on conservation of energy. In his "Doctrine of the Sensations of Zones" he proved that the quality of tone depends upon the presence and relative intensity of the various overtons.

✓ **Henry, Joseph** (1799–1878). American. He invented the first electro-magnetic motor in 1829. He also discovered the principal of electro-magnetic induction and perfected a system of fog signals.

Herschel, Sir William (1738–1822). German astronomer, discoverer in 1781 of the planet Uranus and later on, its satellites and also calculated its period of rotation. He also raised the number of known nebulae from 180 to 2500.

✓ **Hertz, Heinrich** [1857-1894]. German. Discovered that the ether waves produced by electrical discharges could be received for examination by an appropriate instrument and thus laid the foundation of the radio.

Hoe, Richard March [1812-86]. American. He invented the rotary press in 1846 and also a device to fold newspapers as they came from the press, thus helping in the rapid advance of this industry.

Hopkins, Sir Frederick Gowland O. M. F. R. S. [1861-1947]. Eminent English bio-chemist noted for his important work on proteins and vitamins.

✓ **Hooke, Robert** [1675-1703]. English scientist. He was first to formulate the theory of planetary movements as a mechanical problem. He improved astronomical instruments; devised practical telegraphy, invented spiral watch spring; constructed first arithmetical machine and Gregorian telescope. **Hooks Law** is applied in physics which states that the stress on a body is in direct proportion to strain.

Hughens, Christian [1629-95]. Dutch mathematician and physicist. A very brilliant scientist, he formulated the theory of the compound pendulum. He also proved that Saturns' rings went completely round the planet and also discovered one of its satellites. He was the first to see the new famous nebula in Orion. He designed the **Hughens eyepiece** for reducing spherical aberrations.

✓ **Jenner, Edward** [1728-1823]. English. Jenner is famous for his discovery of modern vaccination, which has helped to stop the spread of small pox.

Jeans, Sir, James Hopwood [1877-1946]. Brilliant British mathematician and astronomer. He celebrated a tidal theory of the creation of the solar system and has given us some very fascinating books on astronomy : *The Universe Around us* ; *The Mysterious Universe* ; *The Stars in their Course.*

✓ **Jenner, Sir William** [1815-1898]. Eminent physician who discovered the symptoms which differentiate the symptoms of typhus from typhoid fever.

Joule, James Prescott [1818-1890]. English. Joule investigated the relationship between heat and mechanical work and helped in establishing the law of the conservation of energy. He also determined the mechanical equivalent of heat.

Kelvin, Lord William Thomson [1824-1907]. English. In 1857 he laid the first Atlantic submarine cable. He invented many nautical appliances, most important of which were the modern compass, a tide gauge and tide predictor and the electricity meter. He also introduced the **Absolute Scale of Temperature**..

✓ **Kepler, Johann** [1571-1630]. German. This German astronomer is famous as the discoverer of the 3 laws of planetary motion that bear his name. He ranks as one of the founders of modern astronomy. [The laws are : (1) The orbit of each planet is an ellipse with the sun at one of the foci. (2) The radius vector of each planet describes equal areas in equal times. (3) The squares of the periods of the planets are proportion to the cubes of their mean distances from the sun].

Koch, Robert [1843-1910], German. This German bacteriologist isolated the tubercle bacillus in 1882, the germ that causes pulmonary tuberclosis and invented the tuberclin test by which cattle are now tested.

Lamarck, Jean Baptiste [1744-1829]. French biologist. Theories as propounded in his philosophic Zoologique have had a profound influence on the theory of evolution as elaborated by later day scientists. Lamarchism may be summarized thus : (1) Changing environments create new needs (2) changed needs create new habits (3) new habits create use and disuse of structures (4) use and disuse of structures lead to structural modification (5) the acquired habits are inherited by the offspring (6) the structural modifications arises earlier and earlier in successive generations until they are finally inherited.

Laplace, Pierre Simon, Marquis de [1749-1827]. French mathematician and astronomer. He is remembered for his famous nebular hypothesis, his studies of the motions of Jupiter and Saturn and of the Moon and tide. He invented the Laplace differential equation.

Lawrence, Ernest Orlando [1901—]. U.S. physicist, winner of Nobel Prize in Physics in 1939. He built the first cyclotron for the production of very high energy (million of electron volts) particles with which he accomplished transmutation of chemical elements and artificial radio-activity.

✓ **Lavoiser, Antonine** (1743–1794). French. Lavoiser proved that combustion was due to the combination of the burning substance with oxygen, not, as hitherto believed, to the liberation of a fiery substance known as philogiston. He stated that matter can neither be created nor destroyed. ✓

Leblanc, Nicolas (1742–1836). He devised the method for manufacture of sodium carbonate (Washing Soda).

Linnaeus, Carl (1707–78). Swedish botanist. He is celebrated as the founder of the system of the classification of plants which bears his name and which has formed the basis of modern classification.

Lippershey, Hans. Dutch spectacle maker who is said to have discovered the telescope by chance.

Lister, Joseph (1827–1912). English. Lister is the founder of anti-septic surgery, which has made modern surgery so safe by the use of the antiseptic.

✓ **Leeuwenhock, Antony Von** (1632–1723). Dutch by birth, he was the first to make powerful lenses and simple micro- ✓

scopes which made him the first man to see protozoa and bacteria, as well as the red blood cells.

Marconi, Guglielmo (1874–1937). Italian. Marconi is the inventor of commercial wireless telegraphy.

✓ **Maxwell, J. C.** Scottish Physicsit (1831–79). He developed the theory of electro-magnetic field on mathematical bases. His fame therefore rests on the rigorous formulations of the electromagnetic field theory and the theory that light is electromagnetic in nature. He also wrote papers on colour vision and colour blindness.

Michelson, Albert (1852–1913). American. He is known for his accurate measurement of the speed of light.

✓ **Mendel, Gregor** (1822–84). Austrian. Mendel's researches on heredity laid the foundation of the modern scientific study of the subject.

✓ **Mendeleeff, Dmitri Ivanovich** (1834–1907). Russian. He was the first to arrange the chemical elements in a table in order of atomic mass and to observe the periodicity they displayd when so arranged. It is worthy of note that certain unknown elements were subsequently discovered and found to have the properties assigned to them by Mendeleeff.

Millikan, Robert Andrews (1868–). American. Millikan investigated the nature of cosmic rays. He was the first to isolate and measure accurately the electric charge of an electron.

Maxim, Sir Hiram Stevens (1840–1916). He invented the maxim machine gun and explosives. His son **Hiram Percy Maxim** invented an automobile and silencer, for explosive weapons. The most useful is the invention of silencers for gasoline engines.

✓ **Michelson, Albert Abraham** (1852–1931). U. S. physicist. He was the first American to win the Nobel Prize for Physics in 1907. He made the most precise measurement of the speed of light. His famous "ether drift" experiments conducted with Morley led in the end to Einsten's famous Special Relativity Theory. He also measured the tidal effects of the moon on solid crust of the earth.

Morse, Samuel Finley Breese (1791–1872). American Inventor of the megnetic telegraph and the Code of dots and dashes named after him.

Morgan, Thomas Hunt (1866–1945). American biologist who was awarded the Nobel Prize for originating the theory of paired elements within the cromosomes, which govern heredity.

✓ **Newton, Sir Isaac** (1642–1727). English. Celebrated scientist and mathematician, author of the Law of Universal Gravitation and the three laws of motion which bear his name. He also invented the binomial theorem and the Differential and Integral Calculus. He also discovered the composition of white light, added greatly to the world's knowledge of optics.

Nobel, Alfred (1833–96). Swedish chemist, world famous for establishing the Nobel Prizes awarded every year for the year's most important discovery or invention in the spheres of chemistry, physics and medicine, most distinguished literary work and outstanding service to international peace. Invented dynamite and balistite, a smokeless-gun powder.

Noguchi, Hideyo (1876--1928). Japanese bacteriologist. He did much valuable work in connection with syphilitic diseases and discovered the parasite of yellow fever.

Oersted, Hans Christian (1777–1851). Dutch physicist and chemist. He was the first to isolate aluminium, He is, howevr, best known for his discovery that a wire carrying a direct current causes a magnetic needle to take a position at right angles to the wire—a basic fact of electromagnetic induction. The **Oersted** is the name of the centimeter-gram-second electromagnetic unit of magnetising force.

Ohm,George Simon (1787–1854). German. He discovered the law of conduction known as the Ohm's Law, which state that the strength of an electric current is equal to the electromotive force devided by the resistance of the conductor.

Paracelsus (1497–1547). Swiss German chemist and physicist known for his use of chemicals in medicine, *e.g.*, arsenic, opium, mercury, iron, sulphur, mineral baths.

Pascal Blaise [1623–1662] French Celebrated philosopher and mathematician who proved that atmospheric pressure varies with altitude. He discovered also that enclosed fluids transmit pressure equally in all directions. He also explained the theory of infinitismal calculus and mathematical theory of probability.

✓ **Pasteur Louis** (1822–1895]. French. This celebrated French chemist discovered the causes of fermentation in alcohol and milk and proved the organism stimulating it are contained in the atmosphere. Invented by these researches, the method of preservation called pasteurization. He also discovered treatment for hydrophobia.

Pauling Dr. Linus. American. An expert on structure of protein molecules. Attached to the Gates and Chellin Chemical Laboratory, California. Awarded the 1954 Nobel Prize for Chmistry.

✓ **Pavlov, I. P.** (1849–1936). Russian physiologist well known for his researches on digestion for which he received the Nobel Prize in 1904. His studies of conditioned reflexes in animals has influenced later writers.

Prout, William [1785–1850]. British chemist. He is best known for the hypothesis which bears his name, that hydrogen is the fundamental element and that the atomic weigts of all the other are whole number multiples of that of hydrogen.

Perkin, Sir William Henry [1838–1907]. English. He was responsible, by his discovery of a mauve dye [1856] for founding the analine dye industry.

✓ **Planck, Max** (1858–1947). German, Author of the Quantum Theory.

✓ **Priestley, Joseph** [1733–1804]. English. He discovered oxygen.

Pupin, Michael (1858-1935). American. Physicist and inventor. He is known for researches in X-ray, for invention of many electrical devices used in telegraphy and telephony.

✓ **Raman, Sir C. V.** (1882-). Indian. Sir Raman became famous for his discovery in 1929 of the *Raman Effect*, which occurs when light passes through a transparent substance.

Ramsay, Sir William (1852-1916). Well known British chemist ; who, together with Lord Rayleigh, discovered argon, manufactured helium, and identified the rare gases neon, krypton and xenon, present in small quantities in the air. He also noted the transmutation of radium into helium.

Raleigh, John Stuart (1842-1919). British physicist who, along with Ramsay, discovered argon in the atmosphere. He also obtained many important results both by mathematical analysis and experiment, in all branches of physics, specially heat and sound.

Richards, T. W. (1868-1928). U. S. chemist. He made basic contribution to the determination of atomic weights, improved the method of chemical weighing and discovered the isotopes of lead from uranium and thorium. Awarded the Nobel Prize for Chemistry in 1914.

Roemer, Olaus (1644-1710). Danish astronomer, who was the first to measure the velocity of light by a study of the eclipses of Jupiters' satellites.

✓ **Roentgen, Wilhelm Konard** (1845–1923). Famous German scientist, discoverer of X-rays.

Ross, Sir Ronald (1857–1932). Indian born English physician famous for his work in malaria. He proved that the disease is caused by the bite of a mosquito which carries the malaria germs and this can be eradicated by the suppression of the mosquito.

✓ **Rumford, Count** (1753–1814). British-American scientist. His great contribution to science was the recognition of heat as a form of energy.

Rutherford.Lord Ernest (1871–1937). New Zealander. A great pioneer of modern atomic science. His main researches were in the field of radio-activity. He was the first to recognise the nuclear nature of the atom.

Schleiden, Malthias (1804–1881). German scientist who proved that all plant tissue are made up of cells.

Schwaan, Theodore (1810–1882). German scientist who made the epoch making discovery that all life begins from a single cell which subdivides many times and ultimately forms the tissues and organs of all plants and animal on this earth.

Selman a Waksman. One of the formost living U. S. scientist who won the Nobel Prize for Medicine in 1952 for discovering streptomycin.

Stephenson, George (1781–1848). English. Inventor of the steam locomotive.

Snell, Willebrord (1591–1626). Dutch mathematician generally credited with the discovery of the laws of refraction of light (1621). Although measurements of the angles of incidence refraction had been made by ancient philosophers the exact relation between the angle of incidence and refraction was discovered by Snell.

Thomas Godfrey. U. S. inventor of the Sextant ; also John Hedley (England) invented this instrument, both in 1731.

✓ **Thomson, Sir Joseph John** (1856–1940). English. His greatest work was done on the conduction of electricity through gases and the structure of the atom. He was the first to discover the electron and he carried out experiments to determine the charge and mass of the electron and devised a method for the analysis of positive rays.

✓ **Torricelli, Evengelista** (1608–1647). Famous Indian scientist who invented the mercury barometer by which he proved the existence of atmospheric pressure. This tube is a lso, sometimes called the Torricellian tube, and the vaccum in such a tube above the mercury column the Torricellian vacuum.

Tyndall, John (1820–1893), Irish physicist, who showed that friction produces heat. His greatest work was in connection with researches into molecular physics and radiant heat, as well as accoustics.

Urey, Harold Clayton(1893–). American. He is the discoverer of "Heavy Water".

✓ **Volta, Alessandro** (1745–1827). Italian. Volta developed the cell now called the voltaic cell. The volt which is the practical unit of electromotive force is named in his honour.

Vernier, Pierre (1580–1637). French geometer. He invented the instrument known as the Vernier, after him, which is a device for taking readings on a graduated scale to a fraction of a division.

Vornoff, Serge (1866-1951). He is famous for his grafting of animal gland on the human body to rejuvinate it.

Watt, James [1763–1819]. Scotch. Watt is the inventor of the main features of the modern Steam Engine. The Watt, the unit of electrical power is named in his honour.

Wright, Joseph [1871–1948]. and **Wilbur** [1867–1911] are famous Americans ; poineers in flying.

Wilson Dr. C. T. R. English. Inventor of the Wilson cloud chamber, an apparatus for the detection and measurement of the tracks of small particles, especially fundamental particles invisible in microscope or electron microscope. Invented by Wilson in 1911.

Young, Thomas [1773–1829] English Physicist and physician, known for his **Young's Modulus**—a number representing (in poundes per square inch or in dynes per square centimeter) the ratio of stress to strain for a wire or bar of a given substance. He was the first person to state the Young-Helmholtz theory of colour vision, studied structure of the eye, and described astigmatism.

Zepplin, Ferdinand [1888–1947]. German airship pioneer. whose airship threw bombs on London during 1st World War.

Soddy, Frederick [1877–]. British chemist and physicist, winner in 1911 of Nobel Prize in Chemistry for his work on isotopes. In 1922 he predicted that helium would be found to be a by-product of radio-active transformations.

Muller, Paul [1900–]. Swiss chemist known for his synthesis of **D.** D. T. and the demonstration of its insecticidal properties.

Solvey, Ernest [1832–1922]. He invented the ammonia-soda process for manufacturing sodium cabonate (*i. e.*, washing soda).

SCIENTIFIC NAMES OF SUBJECTS

Anatomy. Science of bodily structure, the cutting up of animal bodies and separating into parts for study.

Aeronautics. Science of air navigation.

Archaeology. Study of ancient civilisation from the old buildings and monuments.

Aerodynamics. The branch of Physics that treats the laws of motion of gases, especially atmospheric under the influence of gravity and other mechanical forces.

Astrology. Art of prediction by judging the effect of heavenly bodies upon the destiny of man.

Astronomy. Science of the heavenly bodies ; the science which deals with their magnitude, motion, relative positions and all connected phenomena.

Accoustics. The science of sound pertaining to the sense of hearing.

Astrophysics. A branch of astronomy concerned with the physical nature and composition of stars.

Ballistics. Scienee of launching projectiles into the atmosphere or space.

Biochemistry. The study of the chemical or physio-chemical processes and products involved in the life phenomena of plants and animals.

Botany. Science of the study of plants.

Biology. Science of plants and animals.

Ceramics. Art of pottery.

Callisthenics. Exercises for promoting beauty and strength.

Cosmography. Description, mapping of general features of the universe or earth.

Demography. Statistics of birth, diseases etc. illustrating conditions of community.

Entomology. Study of insects.

Ethnology. Science of races and their relations to one another and their characteristics.

Eugenics. Science of production of fine offsprings.

Embryology. Science of the womb.

Etymology. Part of linguistic science concerned with facts relating to formation and meaning of words.

Ethnography. The subject which deals with the regional distribution of the races of mankind.

Gynaecology. The branch of medicine that is concerned with the diseases peculiar to woman, specially of the genital tract and its structure and glands connected with it.

Genealogy. Table showing descent of family or of animal species in the shape of tree with branches.

Gastronomy. Art and science of good eating.

Genetics. The study of heredity of individuals.

Geophysics. Science dealing with the properties of matter and energy which bring about changes in the earth's surface.

Geopolitics. Study of nation's political life in relation to its geographical features.

Geology. Science of earth's crust, its strata and their relations and changes.

Geodesy. Branch of mathematics dealing with the shape and area of the earth.

Horticulture. Art of garden cultivation.

Hydropathy. Medical treatment by external and internal application of water.

Hydroponics. Soilless agriculture, the raising of plants in nutrient mineral solutions without soil round the roots ; it is also called water culture.

Hydrodynamics. Science of the forces exerted by liquids.

Heliotherapy. Use of sun-baths in healing diseases.

Hydrography. Scientific description of the waters of the earth.

Hydrophonics. Detection of sound by water.

Lexicography. Dictionary making.

Metallurgy. The branch of science dealing with the method of extraction of metals from their ores, and the preparation of alloys.

Meteorology. Science of weather and climate.

Mycology. Study of fungi.

Numismatics. Study of coins or coinage.

Ornithology. Scientific study of birds in structure, their habits etc.

Osteopathy. Surgery as a profession particularly to correction of deformities.

Optics. Science of the eye or sense of sight.

Pathology. Science of bodily diseases.

Paleobotany. Science of the fossils of plants.

Phonetics. Representing vocal sounds.

Pedagogy. Science of teaching.

Penology. Study of punishment and of prison management.

Philology. Science of languages-

Philately. Art of stamp-collecting.

Palmistry. The art of reading the past or future of a person by judging the lines on the palm of his hand.

Phsiography. The study of the physical features of the earth, their causes and their relation to one another.

Psychology. Science dealing with the study of human mind.

Pisciculture. Artificial rearing of fish.

Photomicrography. The taking of photographs through microscope.

Radiology. Science of conversion of radiant energy into mechanical force.

Seismology. Study of earthquakes.

Sericulture. Study of silk worm breeding.

Taxidermy. Art of preparing and mounting skins of animals in life-like manner.

Topography. The art of representing on a map the physical features of a place.

Toxicology. The science that treats of the origin, nature, properties, and effects of poisons, of their detection in the organs and issues, and of the treatment of diseases due to poisoning.

CHEMICAL NAMES AND CHEMICAL FORMULAE

Name	*Chemical name*	*Chemical formulae*
Glaubers' salt	Decahydrated sodium sulphate	$Na_2SO_4\ 10HO_2$
Plaster of Paris	Calcium sulphate dihydrate	
Caustic soda	Sodium hydroxide	$Na\,OH$
Washing soda	Sodium carborate decahydrate	$Na_2CO_3\ 10H_2O$
Alum	Double sulphate of aluminium and potassium	$K_2\ SO_4\ Al_2\ (SO_4)_3\ 24.H_2\ O$
Laughing gas	Nitrous oxide	$N_2\ O$
Oil of vitriol	Sulphuric acid	$H_2\ SO_4$
Chalk	Calcium carbonate	$Ca\ CO_3$
Slaked lime	Calcium hydroxide	$Ca\ (OH)_2$

Common salt	Sodium chloride	$Na\ Cl$
Lime	Calcium carbonate	$Ca\ CO_3$
Quicklime	Calcium oxide	CaO
Baking soda	Sodium Bicarbonate	$Na\ H\ CO_3$
Soda-ash	Sodium carbonate	$Na_2\ CO_3$
Saltpetre	Potassium nitrate	
White viticol	Hydrated Zinc sulphate	
Green vitriol	Ferrous sulphate	$Fe\ SO_4\ 7H_2O$
Blue vitrial	Copper sulphate	$Cu\ SO_4\ 5H_2O$
Aluminia or corundum	Aluminium trioxide	$Al_2\ O_3$
Epsom salt	Magnesium sulphate heptahydrate	$Mg\ SO_4\ 7H_2O$
Sal-ammonia	Ammonium chloride	$(NH_4)Cl$
Bleaching powder	Chloride of lime	$Ca\ OCl_2$
Chile saltpetre or caliche	Sodium nitrate	$Na\ NO_3$
Gypsum	Calcium sulphate dihydrate	$Ca_2SO_42H_2O$
Corrosive sublimate	Mercuric chloride	$Hg\ Cl_2$
Vinegar	Dilute acetic acid	$CH_3OC\text{-}OH$
Hypo (of photography)	Sodium Thiosulphate (also called sodium Hyposulphate	$Na_2S_2O_25H_2O$

THE LAWS OF SCIENCE

1. Archemides' Principle

If a body is immersed completely or partly in a liquid, it undergoes a loss of weight, which is equal to the weight of the fluid displaced by the body.

2. Graham's Law of Diffusion

This law relates to the diffusion of gases through small orifices, and states that gases (at equal temperatures and pressures) diffuse at a rate which is inversely proportional to the square root of the densities of the gases.

3. Newton's Law of Cooling

The law states that the rate of loss of heat from a hot body placed in still air is proportional to the difference of temperature between the body and the surrounding.

4. Newton's Law of Universal Gravitation

There exists a force of attraction between any two bodies. This force is directly proportional to the mass of each of the bodies and inversely proportional to the square of the distance between their centres.

5. Hook's Law

The law states that within the limit of elasticity, the stress on a body is in direct proportion to strain. Stated in other words, it states that extension (be it in springs, wires or elastic bodies) is directly proportional to the applied force.

6. Pascal's Law

This law states that in a enclosed fluid, if an increased pressure is produced in any part of the fluid, then this change of pressure is transmitted to all the other parts of the fluid.

7. Boyles Law

The law states that the volume of an enclosed gas is inversely proportional to the pressure applied to it, if the temperature remains constant.

8. Newton's Laws of Motion

Ist Law. Everything continues in its state of rest or uniform motion in a straight line unless it is acted upon by some impressed force.

2nd Law. The rate of change of momentum of a moving body is proportional to the impressed force and takes place in the direction in which the force acts.

3rd Law. Action and its reaction are always equal and opposite.

9. Avogadro's Law or Hypothesis

This law, concerning with the properties of gases, states that equal volumes of different gases contain equal number of molecules provided that pressure and temperature are the same.

10. Laws of Chemical Combination

(*a*) In a chemical reaction, matter is neither created nor destroyed.

(*b*) A chemical compound always contains the same elements united in the same proportion to weight.

(*c*) If two elements combine to form two or more compounds, the two or more weights of the one element that combines with a fixed weight of the other element, bear a simple ratio to one another.

11. Laws of Reciprocal Proportions.

Elements combine in proportion to their equivalent weights.

12. Dulong and Petit's Law

The atomic weight of an element × specific heat = 6.4 (approx.)

13. Ohm's Law

This law states that the ratio of the steady voltage between any two points of a circuit to the direct current flowing between the two points is constant.

This constant ratio is the resistance on the part of the circuit between the two points *i.e.*,

$$\text{Resistance} = \frac{\text{Voltage}}{\text{Current}}$$

14. Kepler's Laws of Planetary Motion.

1. Orbit of each planet is an ellipse of which the sun's centre is one of the foci.
2. Radius vector of each planet (*i.e.*, the line joining its centre with that of the sun) moves over equal areas in equal time.
3. Square of the period of each planet's revolution around the sun is proportional to the cube of its mean distance from the sun.

INDIAN LITERATURE

BENGALI LITERATURE

In the early and middle years of the 19th century Bengal experienced a great Rennaissance in the field of thought and letters. Raja Ram Mohan Roy stood at the head of the movement and soon a number of talented Bengalis took up his lead. In the realm of literature the great awakening showed itself in the emergence of prose, enrichment of poetry and rise of drama.

Michael Madhusudan Datt (1824–72) : The founder of new Bengali literature. Took to Bengali, after having produced some first-rate English verse . His writings are of a heroic cast, grand and majestic. *Meghnad Badh* (written a few years after the Indian Mutiny) is an epic of enduring greatness, dealing with the famous story of the slaying of Meghnad, son of Ravan, by Lakshman and the remarkable fidelity of his (Maghnad's) wife. Also wrote devotional lyrics about Radha and Krishna, entitled *Brajangana*, and Petrarchian sonnets in Bengali.

Bankim Chandra Chatterjee (1838–93) : The literary king of Bengal after Madhusudan and creater of the Bengali novel. Swayed by patriotic sentiments, he strives in his works to restore national pride aud self-respects. Chose historical heroic themes for novels, which occasionally have a certain anti-Muslim bias. Gifted with powerful imagination and a deligtful sence of humour.

Bankim's Works :

1. **Historical Novels** : *Mrinalini*, presenting vivid picture of Bengal, betrayed by her early Muslim invaders : *Durgeshnandini*, *Kapal Kundala* both have for their setting Bengal of Akbar's time. *Raj Singh* deals with Rajput chivalry in the time of Aurangzeb ; *Sitaram* deals with Bengal under the Nawabs of Murshidabad ; *Chandra Shekhar*, *Devi Chaudhurani* and *Anandamath* have for their setting the early period of the rise of the British in India.

2. **Social Novels** *Bishbriksha* and *Kishnakanter* deal with the problem of beautiful young widows. *Indra* is supposed to be his best work.

Other writers of the later half of the 19th century.

Dinabandhu Mitra (real name was Gandharva Narayan) (1839-73). A gifted dramatist, author of a number of fine comedies, bubbling with wit and humour, and dealing with social evils. His masterpiece, however, is a tragedy *Nil Darpan*, dealing the cruelty of indigo planters. The play created an uproar in India and abroad and wps instrumental in removing some of the malpractices of indigo planters. It was translated into English by Michael Madhusudan Dutt, and was also rendered into several other European Languages. Great both as propaganda and a work of art.

Drama was developed by a number of other playwrights notably Girish Chandra Ghose, known as the Garrick of Bengal for his mastery of acting and stage-craft. He wrote a large number of plays about Hindu-mythology and Indian history, the chief of them being *Java*, *Bilvamangal* and *Pandav Gaurab*.

The Twentieth Century.

Rabindranath Tagore : (1861–1941) : The greatest Bengali writer, enjoys international fame. Comes of a talented and versatile family. Began verse making at the age af three or four : at thirteen his poems appeared in print and as an adult he was known all over Calcutta. A prolific and versatile genius : produced an endless stream of poems, plays, stories, novel,s essays, reviews, nursery rhymes, ballads, songs and paintings. Reflected every current and change in the Bengali social and literary scene, so that he became a national dignitary, the voice and conscience of his country. **Poems** : *Gitanjli* ; *Sonar Tare* ; *Shishu Kutha* ; *Graheni Kheya* ; *Purab.* **Plays** : *Bisarjan* ; *Nater Puja* : *O Rami Rani* ; *Rakta Karavi* . **Novels** : *Gora* (his masterpiece) ; *Kumudni* ; *Anakh ki Kirkiri* ; *Ghare Baire.*

Dvijendra Lal Roy (1861–1912): An outstanding poet swayed by patriotic sentiment. Strove for Hindu-Muslim unity ; wrote mostly on heroic and historical subject. *Chandra Gupta* and *Shah Jehan* are his best plays. Also wrote some beautiful sonnets.

Sarat Chandra Chatterjee : A great novelist. Unconventional in his moral and social outlook, His novels are full of a passionate sympathy for the oppressed and the weak. He generally depicts village folks and their women are well-drawn. **Novels** : *Srikanta* (best known) ; *Grihadan*, considered to be his masterpiece ; *Charitrahin*, athe most discussed of his novels, presenting the tussle between nationality and conventional morality ; *Bari Didi*, *Dev Das* *Len Den*, *Vijaya*, *Dehati Samaj*.

IMPORTANT LIVING WRITERS

Achintya Sen Gupta (1903) : A pronounced Freudian and leading figure of the Kallol group. His early novels ; *Bibaher Cheye Barho* and *Prachir O Prantar* were prescribed for pornographic touches. Now he depicts everyday life of the lowest classes with a marxist bias. **Works** : *Amabasya*, *Priya Prithvi*, *Indrani*, *Sanketmay e.*

Anand Shankar Roy (1901) : Began his literary career by writing verses, but is essentially a prose writer producing novels and essays all in a colloquial style tempered with a good deal of intellectualism. *Urki Dhaner Markh* ; *Natun Radha*, *Satvasatya*, *Pathe Probase*.

Banaful (Billai Chand Mukherjee) (1895–) : An ultra-modernist, a great prose writer, with new experiments to his credit. Writes extremely short stories often not more than half page long. His novel *Jangum*, with about a thousand characters, is a fine specimen of plotless and heroless fiction. *Banofuler Kavita, Banafuler Arogalpa, Vidyasagar, Ratri, Dana.*

Bishnu De (1909-) : A distinguished poet with an ultramodern technique of poetrry, which makes his poems often difficult and obscure. Has also produed a few remarkable prose works *Sandwipes Char.*

Budhadeva Bose (1909-) : A Freudian and leading member of the Kallol group. Outstanding critic, poet, novelist and personal essayist. Editor *Kavita*, a monthly. *Bandir Bandana, Droupadi Sarhi, Sarha, Kaler Putul, Uttar Tiris.*

Jibananda Dass (1890-) : A great romantic poet, with a considerable following ; fond of new technique and experiments. *Dhassar Fandulipi, Maha Pirthvi.*

Kazi Nazrul Islam (1899-) : A great poet—the spokesman of defiant nationalism, appeals to the mass mind. His most popular work is *Vidrohi* (The Rebel). Some of his books were declared seditious and banned. He is at present a lunatic, *Agni Vina, Bisher Bansi, Nazrul Gitika.*

Manik Bannerjee (1908-), An outstanding novelist, stressing the subtlety and complexity of human nature. His works tends to be enigmatical, *Putulnacher Itikatha, Shahartali, Atasi Mami.*

Premchandra Mitra (1908-) : One of the greatest modern poets ; associated with the Kallol group. Also a novelist and short story writer, *Parthama Samrat, Michil, Pank, Kuasha.*

Sailajanand Mukherjee (1901-) : A modernist of the Kallol group. Writes short stories about nine-diggors, rustics and other working class people. He has now devoted himself to the production of film ; *Narimedh ; Nandini ; Shaha Theke Dure.*

Tara Shankar Bannerjee {1821- }: One of the modern popular writers; a short story writer of the front rank. His theme is the decaying feudal society of Bengal. Some of his novels have been dramatised and filmed. *Kalindi*; *Dharti devata*; *Kavi*; *Dui Purush*.

Literary activity in Bengal during the past few years has been very great and there are at least two dozen popular and important living writers, but in a brief survey like the present, there is no room for them.

WOMEN WRITER

Swarna Kumari Devi, Girindra Mohini Dasi, Mankumari Devi, Kamini Ray, Priyamvada Devi, Begum Rokeya, Nirupama Devi, Anurupa Devi, Sita Devi, Santa Devi, Lila Mojumdar, Protibha Bose, Begum Sufia Kamal, Radha Rani Devi and Bani Roy.

URDU LITERATURE

Agha Hashar Kashmiri: Dramas; Sur Das, Asir-i-Hirs, Khubsurat Bala, Turki Hoor, Sita Banbas.

Akbar, K.B. Akbar Hussain {1849-1921}: Kulliyat.

Akbar Gauri Shankar: Shahi Lakarhara.

Azad, Mohammad Hussain {1830-1910}: Khawab-i-Amn, Shabb-i-Oadar, Shabb-i.Ummid. Prose: Durbar-i-Akbari, Ab-i-Hayat, Nairang Khayal.

Chakbast Brij Narain (1881-1926): Subh-i-Wattan, Mazamin-Chakbast.

Dagh, Nawab Mirza Khan (1831-1205): Gulzar-i-Dagh, Mahatab-i-Dagh, Yadgare Dagh.

Ghalib Assad Ullah Khan (1709-1869): Ud-i-Hindi, Urdu-e-Mualla, Dewan Ghalib.

Hali, Altaf Hussain, (1837-1934): Yadgare-i-Ghalib, Madd-o-Jar-i-Islam. Dewan-e-Hali. Prose: Muqaddama-e-Sher-o-hairi, Hayat-Sadi.

Hasrat Mohani, Faiz-ul Hussan (1875-1951) : Arab-i-Sukhan, Kuliyat-Hasrat.

Iqbal, Dr. Sir Mohammad (1875-1938) : Bang-i-Dara, Bal-i-Jabril, Armugaan Hiyaz.

Josh Malihabadi—known as the Bard of Revolution. After Iqbal he has wielded the greatest influence on younger poets.

Khwaja Hussan Nizami : Stories : Muharrum Nama, Jag Biti, Bibi Ki Talim.

Mahrum, Tilok Chand (Died, 1966) ; Ganj-i-Manni, Kalam-i-Mehrum.

Mehr, Suraj Narain : Chahr [Darwesh, Rubayat.

Nasim, Daya Shankar Kaul (1781-1843) : Gulzar-i-Nasim.

Nazr, Naubat Rai (*b.* 1886) : Khadan-i-Nazar, Paim-i-Yar.

Prem Chand (1880-1936) ; Novels and stories : Prema, Jalwa-i-Isar, Bazar-Husan, Prem Pachisi, Soz-i-Watan, Khak-i-Parwana, Prem Batisi.

Sharshar, Rattan Nath Dhar (1846-1902) : Fiction : Fasana-i-Azad, Kudai Faujdar, Karamdham.

Sudarshan : Mohabat ka Intkam, Bahaistan, Tahzib ka Taziaha, Sada Bahar Phul.

Ufak, Dwarka Parshad : Todd's Rajasthan.

Zafar, Bahadur Shah : (1868) Diwan-i-Zafar.

Zauk, Mohd. Ibrahim (1779-1854) (Diwan-i-Zanq).

Short Story writers : Prem Chand, Husaini, Krishan Chandar, Bedi, Akhtar Ansari, Ahmad Ali, Ismat Chughtai, Balwant Singh, Hasan Askari and Hajatullah.

Novelists : Ismat Chughtai, Aziz Ahmed, Qurratui Ain Haider, and Saliha Abid Husain, Intizar Husain, Rashid Akhtar, Jamunadas and Shaukat Zhanvi.

Dramatists : Ishtiaq Husain Qureshi, Saiyyid Imtaz Ali Taj, Prof. Muhammad Mujib, Dr. Abid Hussain, Upendra Nath Ashk, K.L. Kapur and Shaukat Thanvi.

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Literary activity in Bengal during the past few years has been very great and there are at least two dozen popular and important living writers, but in a brief survey like the present, there is no room for them.

WOMEN WRITER

Swarna Kumari Devi, Girindra Mohini Dasi, Mankumari Devi, Kamini Ray, Priyamvada Devi, Begum Rokeya, Nirupama Devi, Anurupa Devi, Sita Devi, Santa Devi, Lila Mojumdar, Protibha Bose, Begum Sufia Kamal, Radha Rani Devi and Bani Roy.

URDU LITERATURE

Agha Hashar Kashmiri: Dramas; Sur Das, Asir-i-Hirs, Khubsurat Bala, Turki Hoor, Sita Banbas.

Akbar, K.B. Akbar Hussain {1849-1921}: Kulliyat.

Akbar Gauri Shankar: Shahi Lakarhara.

Azad, Mohammad Hussain {1830-1910}: Khawab-i-Amn, Shabb-i-Oadar, Shabb-i.Ummid. Prose: Durbar-i-Akbari, Ab-i-Hayat, Nairang Khayal.

Chakbast Brij Narain (1881-1926): Subh-i-Wattan, Mazamin-Chakbast.

Dagh, Nawab Mirza Khan (1831-1205): Gulzar-i-Dagh, Mahatab-i-Dagh, Yadgare Dagh.

Ghalib Assad Ullah Khan (1709-1869): Ud-i-Hindi, Urdu-e-Mualla, Dewan Ghalib.

Hali, Altaf Hussain, (1837-1934): Yadgare-i-Ghalib, Madd-o-Jar-i-Islam. Dewan-e-Hali. Prose: Muqaddama-e-Sher-o-hairi, Hayat-Sadi.

Hasrat Mohani, Faiz-ul Hussan (1875-1951) : Arab-i-Sukhan, Kuliyat-Hasrat.

Iqbal, Dr. Sir Mohammad (1875-1938) : Bang-i-Dara, Bal-i-Jabril, Armugaan Hiyaz.

Josh Malihabadi—known as the Bard of Revolution. After Iqbal he has wielded the greatest influence on younger poets.

Khwaja Hussan Nizami : Stories : Muharrum Nama, Jag Biti, Bibi Ki Talim.

Mahrum, Tilok Chand (Died, 1966) ; Ganj-i-Manni, Kalam-i-Mehrum.

Mehr, Suraj Narain : Chahr [Darwesh, Rubayat.

Nasim, Daya Shankar Kaul (1781-1843) : Gulzar-i-Nasim.

Nazr, Naubat Rai (*b.* 1886) : Khadan-i-Nazar, Paim-i-Yar.

Prem Chand (1880-1936) : Novels and stories : Prema, Jalwa-i-Isar, Bazar-Husan, Prem Pachisi, Soz-i-Watan, Khak-i-Parwana, Prem Batisi.

Sharshar, Rattan Nath Dhar (1846-1902) : Fiction : Fasana-i-Azad, Kudai Faujdar, Karamdham.

Sudarshan : Mohabat ka Intkam, Bahaistan, Tahzib ka Taziaha, Sada Bahar Phul.

Ufak, Dwarka Parshad : Todd's Rajasthan.

Zafar, Bahadur Shah : (1868) Diwan-i-Zafar.

Zauk, Mohd. Ibrahim (1779-1854) (Diwan-i-Zanq).

Short Story writers : Prem Chand, Husaini, Krishan Chandar, Bedi, Akhtar Ansari, Ahmad Ali, Ismat Chughtai, Balwant Singh, Hasan Askari and Hajatullah.

Novelists : Ismat Chughtai, Aziz Ahmed, Qurratui Ain Haider, and Saliha Abid Husain, Intizar Husain, Rashid Akhtar, Jamunadas and Shaukat Zhanvi.

Dramatists : Ishtiaq Husain Qureshi, Saiyyid Imtaz Ali Taj, Prof. Muhammad Mujib, Dr. Abid Hussain, Upendra Nath Ashk, K.L. Kapur and Shaukat Thanvi.

ex suite, in succession.
ex improviso, in an unforeseen manner.
fait accompli, an accomplished action.
faute de mieux, for lack of better.
Faux pas, a false step ; a mistake.
fial lux, let there be light.
fine champagne, liquor brandy.
finis coronale opus, the end crowns the work.
fide et fortude, by faith and fortitude.
fides et justitia, fidelity and justice.
fortuna favet fortibus, fortune favours the bold.
grande passion, a passonate infatuation.
gup, chatter, gossip.
grand merci, many thanks.
hic et ubique, here everywhere.
hic finis fandi, here was an end of speaking.
hoi polloi, the multitude, the mob.
honoris cause, as a mark of esteem.
homme de letters man of letters.
homme sni juris, one who is his own master.
how soil qui malay pense, shame on him who evil thinks.
impeperium in imperio, rule within rule.
Impromptu, prompt, ready.
in articulo marti; at the point of death.
in contumactiam, in contempt (of court).
in extenso, completely.
in forma pauperis, as a poor person.
in memoriam, to the memory of.
in status quo, in the same position as before (the war).
In terrorem, as a warning.
in toto, totally as a whole.
initie, to the beginning.
Inter alia, among other things.
inter nos, between ourselves.
in camera, in a (judge's private) room.
in Domino, in the Lord.
in extremis, at the point of death.
ipse dixit, he himself said it.
ipse facto, by that very fact, automatically.

joie de vivre, the joy of living high spirits.

juste milieu, the golden mean.

juvenil, the youthful works of a writer or artist.

jure humano, by human law.

Kultur, culture (always ironically).

laborare est orare, work is prayer.

laissez faire, not interfering, especially of the State in economic matters.

lapsus, a lapse of slip.

l'etate c' est moi, I am the State.

levee en masse, total conscription.

le roy le veult, the king wills it.

lex talions, of retaliation.

littera scripta manet, the written word survives.

Lingua Franca, the mixed language spoken by Europeans in the East.

locus standi, a place for standing : a right to interfere.

magnum, something great.

medio tutissimus tbis, the middle course is the safest.

meum et tuum, yours and mine.

mot juste, appropriate word or expression.

woto perpetuo, perpetual motion ; a musical piece repressing this.

materia medica, medicines collectively all substance, used as remedies ; the science of their properties and use.

matinee, an afternoon recital or performance.

melee, a confused stuff; a hot debate.

memorabilia, thing to be remembered.

monsieur, Sir, Mr.

Modus operandi, mode of operation.

mutatis mutandis, with necessary changes.

ne plus ultra, nothing further; the uttermost point.

WELL-KNOWN QUOTATIONS

1. "A thing of beauty is a joy for ever :
   Its loveliness increases : it will never
   Pass into nothingness." *(Keats : Endymion)*
2. "Beauty is truth, truth beauty."—that is all
   Ye know on earth, and all ye need to know.
   (Keats : Ode on a Greciam Urn)
3. Some books are to be tasted, others to be swallowed and some few to be chewed and digested.
   (Bacon ; Essays; Of Studies)
4. Since brevity is the soul of wit,
   And tediousness the limbs and outward flourishes
   I will be brief. *(Shaeskpear : Hamlet II, 2)*
5. The old order changeth, yielding place to new.
   And God fulfils himself in many ways.
   Lest one good custom should corrupt the world.
   (Tennyson : The Passing of Arthur)
6. The child is father of the Man.
   (Wordsworth : My Heart Leaps Up)
7. I came, I saw I conquered
   (Veni, Vedi Vinci) *(Julius Caesar)*
8. Cowards die many times before their death;
   The valiant never taste of death but once.
   (Shakespeare : Julius Caesar)
9. ......that government of the people, by the people, for the people shall not perish from the earth.
   (Lincoln i Gettysburg Address)
10. England expects every man to do his duty.
    (Lord Nelson at Trafalgar; 1805)
11. Oh, East is East, and West is West, and never the twain Shall meet,
    Till Earth and Sky stand presently at God's great judgment seat.
    (Rudyard Kipling)
12. ......fools rush in where angels fear to tread.
    (Pope ; Essay on Criticism)

13. But be not afraid of greatness; some are born great, some achieve greatness and some have greatness thrust upon them. *(Shakespeare ; Twelfth Night)*

14. Honour and shame from no condition rise;
Act well your part : there all the honour lies.
(Pope ; An Essay on Man)

15. Hope springs eternal in the human breast :
Man never is, but always to be blest.
(Pope : Essay on Man)

16. But hearing often times
The still, sad music of humanity.
(Wordsworth ; Tintern Abbey)

17. Where ignorance is bliss,
'Tis folly to be wise.
(Grey ; On a Distant Prospect of Eton College)

18. How sharper than serpente's tooth it is
To have a thankless child ? *(Shakespeare ; King Lear)*

19. Knowledge is power. *(Hobbes ; Leviathan)*

20. I know nothing except the fact of my ignorance.
(Socrates)

21. The weariness, the fever, and the fret
Here, where men sit and hear each other groan.
(Keats : Ode to a Nightingale)

22. We are such stuff
As dreams are made of and our little life
Is rounded with a sleep. *(Shakespeare : The Tempest IV, 1)*

23. His life was gentle, and the elements
So mix'd in him that nature might stand up,
And say to all the world 'This was a man'.
(Shakespeare : Julius Caesar, V. 5)

24. The man that hath no music in himself,
Nor is not moved with concord of sweet sounds.
(Shakespeare : Merchant of Venice V. 1)

25. What's in a name ? That which we call a rose.
By any other name would smell as sweet.
(Shakespeare : Romeo and Juliet.11, 2)

26. Nature never did betray.
The heart that loved her. (*Wordsworth ; Tintern Abbey*)

27. Patriotism is the last refuge of a scoundrel. (*Dr. Johnson*)

28. Peace hath her victories.
No less renown'd than war.
(*Milton ; Sonnet ; To the Lord Gen. Cromwell*)

29. The voice of the people is the voice of God.
(Vox populi, vox Dei)
(*Alcuin, Episode to Charlemagne, c. 800*)

30. Who rises from prayer a better man, his prayer is answered. (*Goerge Meredith : The Ordeal of Richard Feveral*)

31. Reading maketh a full man ; conference a ready man and writing an exact man.
(*Francis Bacon ; Essays : Of Studies*)

32. The more things a man is ashamed of, the more respectable he is. (*Bernard Shaw ; Man and Superman, 1*)

33. Our sweetest songs are those that tell of sadest thought.
(*Shelley : To a Skylark*)

34. O, it is excellent
To have a giant's strength; but it is tyranneous
To use it like a giant.
(*Shakespeare : Measure For Measure, II, 2*)

35. Know then thyself, presume not God to scan ;
The proper study of mankind is man.
(*Pope Essay on Man, II*)

36. Water, water everywhere,
And all the boards did shrink ;
Water, water everywhere,
Not any drop to drink.
(*S. T. Coleridge : The Ancient Mariner*)

37. To me the meanest flower that blows can give
Thoghts that do often lie too deep for tears.
(*Wordsworth : Intimation of Immortality*)

38. 'Tis strange but true ; for truth is always strange.
Stranger than fiiction. (*Byron : Don Juan*)

38. Virtue is its own reward. (*Cecero : De Fintibus*)

40. Ill fares the land, so hastening ills a prey.
Where wealth accumulates. and men decay.
(*Goldsmith : The Deserted Village*)

41. Frailty, thy name is woman. (*Shakesqeare : Hamlet*)

42. 'To save the succeeding generations from the scourge of war' which twice in our life time haved brought untold suffering to mankind. (*U. N. Charter*)

43. 'I have not become His Majesty's First Minister to liquidate the British Empire.' (*Winston Churchill*)

44. We do not fear to negotiate, but we do not negotiate out of fear.'(*President John F. Kennedy's Inaugural Speech 1961*)

45. 'God in His heaven, all's right with the world.' (*Browning*)

46. For men may come and men may go.
But I go on for ever. (*Tennyson*)

47. 'After me the deluge.'
—the phrase of *Madame de Pampadour*

48. 'I have nothing to offer but blood
toil, tears and sweat.' (*Winston Churchill*)
(While addressing the House of Commons for the first time after his election as Prime Minister of England during World War II).

49. 'Give us good mothers and I shall give
you good nation.' (*Napoleon*)

50. 'More things are wrought by prayer than this world
dreams of.' (*Tennyson*)

INSTITUTE OF EDUCATION FOR WOMEN
Dept. of Extension
SERVICE.
CALCUTTA-27

EDUCATION IN INDIA

According to the Indian Constitution, Education is a State subject. The Centre looks after the facilities and determination of the standard of education in respect to higher education (through the University Grants Commission) and research and scientific and technical education. Co-ordination with regard to Elementary and Secondary education is procured through All-India Councils. The Union Government supervises directly four universities. They are Aligarh, Banaras, Vishva Bharti and Delhi.

Primary Education.

There is an All-India Council which advises the Union and State Governments in relation to elementry education and to devise means for securing early compulsory and free education.

Secondary Education.

Secondary Education Commission made a report in August 1953 and made the following recommendations :

1. One more class should be added to secondary education making it a higher secondary course of 11 years.
2. For improvement in teaching science for introduction of crafts in middle schools, libraries and training of teachers etc.
3. A diversified system of education in which students might choose a group three subjects out of humanities, Science. Technology, Agriculture, Fine-Arts and Home Science besides common subjects,
4. For establishment of All-India Council of Secondary Education which would advise Union and State governments.
5. Languages to be studied compulsory at Secondary stage.

Basic Education.

Basic education applies to elementry level. It is an activity-centered education. spinning. weaving, carpentary, leather work, gardening, book craft, domestic crafts, poetry, elementary engineering etc. is taught. Teachers' training institutions are being turned into basic type.

Higher and University Education.

Higher education in India conducts through colleges and Universities. Universities are of three kinds. Affiliating Universities only prescribe courses of study and conduct examination. The Second type are affiliating and teaching universities. The third type are residential and teaching universities. Many new universities belong to this category.

Inter University Board, founded in 1925, the functions of which are advisory in character, is a forum for discussion of university problems.

Besides the universities, there are a large number of institutions which impart higaer learning. The Birla Institute of Technology and Science, Pilani the Indian Agricultural Research Institute, Delhi, the Indian Institute of Science, Banglore, the Jamia Millia Islamia, New Delhi, the Indian School of International Studies, New Delhi, the Gurukul Kangri Vishwavidyalaya, Hardwar, the Kashi Vidapith, Varanasi Gujrat Vidyapith, Ahmedabad and the Tata Institute of Social Sciences, Bombay, have been deemed to be univsrsities for the purpose of the Universities Grants Commission Act, 1956. Many of the research laboratories and institutions are recognised by the Inter-University Board as centres of higher research. Some of them undertake teaching as well. Besides these, ther are ecertain national institutions like the Gurukul Vishwavidyalaya, Virndavan, whose degrees and diplomas are recognised dy the Government of India as equivalent to the corresponding degrees and diplomas of a university for purposes of employment.

Higher Education.

Two schemes in general education have been suggested by a study team. Basic studies of natural sciences, social sciences and humanities as also training in communication skills have been recommended as compulsory for under-graduate non-professional faculties.

Social Education.

The aim of social education is to provide base for community development programmes and include education in citizenship, culture, recreational activities, and visual aids etc.

Education for Handicapped.

Scolarships are given to blind, deaf and mentally handicapped for higher education and technical training. There are many training centres for the handicapped, *e. g.* for the blind at Dehradun. There are Employment Exchanges at Madras for the blind and the handicapped at Bombay.

HIGHER TECHNICAL EDUCATION

To meet the requirements of technical personnel for the economic development of the country, the Third Plan provided for the establishment of 23 engineering colleges (including 8 regional colleges) and 91 polytechnics. Twelve of the colleges and 54 polytechnics have already started functioning. A college of Architecture has been established at Chandigarh and post-graduate facilities expanded in other colleges-

The Indian Institute of Technology, Kharagpur, the first in the chain of five higher technological institutes, started functioning in 1951. The Indian Institute of Technology, Bombay and the Indian Institue of Technology, Madras, admitted the first batch of students in 1958 and 1959 respectively and the Institute at Kanpur in 1960. The College of Engineering and Technology established in Delhi was raised to the status of an Indian Institute of Technology in 1963. The Institutes at Bombay, Madras and Kanpur, when fully developed, will provide for 1,600 students at under graduate level and 400 at the post-graduate and research level. The targets for the Kharagpur Institute are 2,000 and 400 respectively and for the Delhi Institute 1,250 and 300. The Institutes at Kharagpur, Bombay and Madras have introduced a special 3-year B. Sc. course. An undergraduate course in

Aeronautical Engineering has also been started in the Kharagpur and Kanpur Institute while others propose to start it in the near future. Two Institutes of Management have also come into being at Calcutta and Ahamedabad.

PACTS, PLANS, ACTS, TREATIES AND ALLIANCES

Aid India Club. Formed in 1958 at the instance of the World Bank, its aim was to assist India in financing her Plans. Later U. S. A. Canada. U. K., West Germany and Japan also joined this Club. U. S. A. was more generous than the other countries. It promised assistance equal to the assistance given by other countries combined. A total sum of Rs. 2,500 crores was provided during the Third Plan. France, Italy, Austria, Belgium and Netherlands have also joined this club.

Acheson Plan, 1950. Features (i) To form an international security petrol, (ii) that U. N. members should keep ready units for contribution to U. N. Force, (iii) that General Assembly should meet within 24 hours.

Anti-Comintern Pact. Agreement signed between Germany and Japan on November 25, 1936, opposing Communism as a menace to peace and order. The pact received the adhesion of Italy in 1937, and of Hungary, Spain and Manchukuo in 1942. It was nullified by the defeat of Germany and her allies in 1940.

Arab League. Formed in 1945, it represents Arab nationalist sentiments. Members—Egypt, Iraq, Jordan, Lebanon, Saudi Arabia and Yemen. Its aim was to bring Arab Unity and collaboration. Three more countries—Libya, Sudan, Tunisia joined later.

A. N. Z. U. S. (Pacific Pact). (Australia, New Zealand and U. S.). Treaty between these countries was concluded on Sept. 1, 1951. Its main condition is that attack on one will be considered an attack on the other, when the other parties will also join.

Austrian Peace Treaty. Signed May 15, 1955. The occupation forces of U. S., U. K., Russia and France were to b withdrawn and Austria was to become independent. Austria agreed not to join any military pact and remain neutral.

Axis Rome-Berlin. A term denoting the political collaboration of Germany and Italy, initiated during the Abyssinian conflict in 1936, strengthened by Italy's accession to the Anti-Comintern Pact in 1937 and developed into full political and military alliance in 1939.

Baghdad Pact (Now CENTO). A treaty originally between Iraq and Turkey in Feb. 1955. U. K., Pakistan and Iran also joined later in 1955. It was a Pact of mutual defence. Iraq withdrew in March 1955 after its revolution. It was renamed Central Treaty Organization. Its headquarters were shifted in Oct. 1958, from Baghdad to Ankara.

Balkan Pact. Pact signed in August 1954, between Greece, Turkey and Yugoslavia, providing for immediate military and other assistance by all the partners if any one is attacked.

Benalux. It is a custom union of Belgium, Netherlands and Luxembourg.

Brussels Pact. Between Britain, France, Belgium, Netherlands, Luxembourg. Signed March 1948. Its aim was 'all the military and other aid and assistance' if one of them was attacked in Europe.

Central Treaty Organization. Formerly the Baghdad Pact. This is the latest defensive military pact made in 1955, to which Great Britain, Iran, Turkey and Pakistan are signatories. it is actually made as a deterrent to any aggression from the Communist bloc of nations. The real force at the back is that of the U. S. A. After the establishment of the Republic in Iraq. Iraq backed out of it. Its new name has been changed from the Baghdad Pact to Central Treaty Organization.

Central Powers. Stands for the combination of Germany, Austria, Turkey and Bulgaria during the World War I.

Colombo Plan. This Plan was devised in January 1950 at Colombo by Commonwealth Foreign Ministers for cooperative development of South and South East Asia. The members are : India, Pakistan, Burma, Ceylon, Nepal, Thailand, Vietnam, Laos, Combodia, Philippines, Malaya, Singapur, Indo-china and Borneo containing about 1/4th of the world population. Headquarters are at Colombo, Ceylon. Funds come from assisted countries, commonwealth countries, U. S. and World Bank.

Cominform. Abbreviation for the Cammunist Information Bureau, set up in October, 1947. Its aim is to co-ordinate the activities of the Communist Parties on the basis of mutual agreement.

Commonwealth of Nations. The Commonwealth is a free association of twenty-four sovereign independent nations. U. K., Canada, Australia, New Zealand, Ceylon, Nigeria, Ghana, Malaysia, Cyprus, Sierra, Leone, Uganda, Tanzania, Jamaica and Trinidad, Tobago, Kenya and Malawi and the Republics of India and Pakistan. Zambia and Malta which acheived independence in 1964 also joined the Commonwealth. Gambia, Singapore and Guyana have also joined recently.

It is neither a Federation nor a Union but its members are united by democatic ideals.

Canada, Australia, New Zealand and Ceylon all owe common allegiance to the Queen of England as she is the symbol of their full association in the Commonwealth.

India, Pakistan, Ghana, Cyprus, Tanganyika, Nigeria, Tanzania and Kenya, being Republics do not owe allegiance to the Queen but accept her as the symbol of free association of member nations of the oommonwealth.

South Africa withdrew from the Commonwealth in 1961. All the twenty-four member nations are free to control their affairs, home and external, according to their own sweet will. They are free to shape their home and foreign policies, make laws, enter into treaties with other nations and decide issues of war and peace. It meets once a year. There is no fixed agenda and no formal decisions are taken.

Comintern. Abreviation for Communist International (See International).

Council for Mutual Economic Assistance. It was established in 1949 by East-European countries to provide an economic structure like that of Council of Europe. Its members: Albania, Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland, Rumania and Russia.

Council of Europe. Set up in Aug., 1948. Members—Belgium, Denmark, France, Ireland, Italy, Luxembourg, Netherland, Sweden, Norway and U. K. It is empowered to discuss all matters of commmon concern, except national defence. The Principal object of the Council is the defence on Europe against Communism.

East European Mutual Assistance Treaty or Warsaw Pact. It was signed at Warsaw in May 1955. It established a unified command for armed forces of East European countries, Albania—Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania,and Russia. Formed for mutual assistance in case of attack on any member.

European Common Market or Economic Community. Members : Algeria, France, West Germany, Italy, Luxembourg and Netherland Eastablished, 1st Jan. 1958, Aim : To establish a common market, or device commmon policies for agriculture, to set up institution for common economic development and to reduce tariffs to be achieved between 12 and 15 years. Great Britain which earlier, abstained from joining the Common Market, applied for its membership ; but her entry was vetoed by France.

Euratam. Established Jan. 1, 1959. The member nations are the same as of the E. C. M. (European Common Market) *viz*.. France, Italy, West Germany, Belgium, Netherlands and Luxembourg. This association has been formed to carry on joint research on peaceful uses of Atomic Energy. The International Atomic Energy Agency shall make available the fissionable material to Euratam.

European Free Trade Association (E. F. T. A.) or Outers Seven. Formed in 1959 at Stockholm.

Members. Britain, Portugal, Norway, Denmark, Austria, Sweden and Switzerland. Finland is an associate member.

Aims and Objectives :

(1) To establish free trade in industrial products between member nations.

(2) To meet the challenge of E. C. M.

It is a loose grouping of seven countries. The member-nations cut down tariffs among themselves and it was decided that they were ultimately to be abolished. The member nations were permitted to pursue their own internal tariff policy in respect of the non member countries.

Europeon Defence Community. Condition—Attack on one member State to be considered as attack on all others. It establishes mutual defence organization. But it never came into existence. The aim was to produce more coherent organization than N.A.T.O.

Franco.German Treaty (Jan. 1963). The Presidents of France and West Germany, General de Gaulle and Dr. Konrad Adinauer entered into a treaty of mutual friendship in Jan. 1963. Both the Governments pledged mutual co-operation in defence, foreign policy, education and youth affairs.

G. A. T. T. (General Agreement on Tariffs and Trade). It was formed in 1947 by 23 countries at a meeting held in Geneva to establish a uniform tariff policy. The emphasis shifted from tariff bargaining to the prevention of restrictive and discriminatory control over imports after 1955. The countries which adhere to G. A. T. T., account for about four-fifths of international trade.

Group Areas Bill. A Bill passed in June 1950, by the South African Government, under the leadership of Dr. Malan, with the purpose of segregating the different communities living in the South African Union. Its aim is to crush the Indian community economically and squeeze it out of the country by adopting methods of social persecution not very different from Hitler's.

Indo Pakistan Pact on Minorities. A treaty of bilateral guarantees for minorities and human right between India and Pakistan early in April 1953. The two countries agreed

(1) to give protection to the minorities (2) that the minorities in both countries will be regarded as their citizens (3) that atmosphere and condition would be created in both the countries by which all rancour and fealing of ill-will are removed for the minorities (4) that those who wish to migrate would be allowded to do so without hindrance (5) that ministries would be appointed by both the countries who would see to the implementation of agreement arrived at.

Indo-Soviet Pact. Signed in New Delhi in February, 1955 between Russia and India for setting up a steel plant in India with Russian collaboration. The Bhilai plant is its outcome.

Internationals. Name given to a number of International bodies set up by socialist and labour organisation to co-ordinate their policies. The first international was founded by Marx in 1864 and second in 1889 with revolutionary tendencies. The third Communist International or the 'Cominterm' was founded at Moscow in 1919.

International Bank. World Bank opened under the Bretton Woods Agreement with an authorised capital of 9,100,000,000 dollars with the purpose of aiding the reconstruction and development' of members' territories, promoting private foreign investment contributing to the long range balanced growth of trade by promoting international investment and even giving loans to private corporations on their governments guarantee the repayment of the loans etc.,

Japanese Peace Treaty. Peace treaty signed in Sep. 1951, at Sen Francisco, U. S. A., to end the state of war existing between Japan and the rest of the countries that were ranged against it in the 2nd World War. Forty-nine nations, including Japan, signed the treaty, while Russia, Poland and Czechoslovakia refused to sign it.

Locarno, Treaty of. Also known as Locarno Pact, concluded on November 16, 1925, between Great Britain, France German, Italy and Belgium surrendering the right to make war by providing for mutual guarantees against aggression especially in the Rhineland. Germany suddenly denounced the pact in 1936 and sent forces to Rhineland. Belgium withdrew from the treaty in 1937 and thus the Pact came to an end.

Lease and Land Act, 1942. It allows the President of U.S.A. to sell, give or lend military articles to a country which the President thinks is essential for the defence of U.S.

Marshal Plan (European Recovery Programme). the effects of the Second World War proved more disastrous for Europe than the First World War. Hunger, poverty, desperation and chaos existed everywhere. It was feared that all the Europe would be driven to the lap of communism. On June 5, 1947 the U. S. Secretary of State, General Marshal declared that if Europe was to be saved, the United States should immediately extend coordinated aid to the European countries. He asked them to draft a Plan for their economic reconstruction. He promised liberal financial aid. This is the Marshal Aid or the Marshal Plan About sixteen contries availed the opportunity. Greece stabilized herself on account of this aid. U. S. A. gave a total aid of 44 million dollars to Europe.

Multi-lateral Force (M. L. F.). At a meeting of the N. A. T. O. Council held in Ottawa in June 1963 it was decided to establish a multilateral nuclear force. The primary objective of this was to give the European nations an equal voice in control and use of nuclear weapons.

France insisted on developing her own independent nuclear force. Whereas Germany wanted certain modifications; Britain was hesitant to join it. Russia strongly protested against formation of M. L. F. It was later renamed as Atlantic Nuclear Force (A. N. F.).

Malayasia. The federation of Malaysia was formally proclaimed on Sep.15, 1963. The federation their consisted of Malaya, Singapur, Sarawak and North Borneo. It comprised an area of nearly 131 thoussand sq. miles and included ten million people. The oil rich State of Borneo chose to stay out.

A U. N. Commission under the Secretary General was appointed to find out the opinion of North Borneo and Sarawak. The people gave their verdict in favour of Malayasia. Hence the establishment of Malayasia on Sep. 15, 1963. Indonesia has ended her confrontation with Malyasia after three years. Singapore has attained independence (1966)

Munich Pact. Agreement betwen Britain, France, Germany and Italy signed at Munich on September 29, 1938. There by the Sudetan-German districts of Czechoslovakia were ceded to Germany without a plebiscite.

North Atlantic Treaty Organisation (N. A. T. O.). A regional defence pact signed in Washington on April 4, 1949, by the U. S. A., Britain, France, Canada, Belgium, Holland, Italy, Denmark, Norway, Luxembourg, Iceland and Portugal by which signatories declared their determination, to safeguard jointly their common freedom, heritage and civilization and promote stability in the North Atlantic area. An armed attack on any one of them in Europe and in North America was to be regarded as an attack upon them all, and joint action was to be taken to reply the common enemy.

Ottawa Pact. Signed at Ottawa (Canada) in 1932 at the Imperial Economic Conference between Britain and the Dominions, India and South Rhodesia. It embodies the principles of Imperial preference by which each empire unit undertook to give preference to the goods of the United Kingdom and of each other.

Organisation for American Unity (O. A. U.). Established in May, 1963. All the African States (31) pledged to liquidate the colonial regime in Africa. Italy decided to boycott the South Africa and the Portuguese. Headquarters : Dar es Salam (Tanganyka).

Paris Agreement, Nov. 1954. According to this, Europeanisation of Scotland and admission of Germany to N. A. T. O. was agreed. Also West Germany was prohibited from manufacturing atomic, biological and chemical weapons.

Point Four Programme of U. S. The U. S. which feels concerned about saving the world from communism felt that the under-developed countries should be assisted economically. Thus a progamme known as Point Four Programme was devised to assist under-developed countries by providing (i) technical assistance (ii) to encourage investment of U. S. Capital.

Pan-American Union [Organisation for American States]. The aim of this is to promote political and economic collaboration between American States and feeling of units between North and South America. Later it was agreed that mutual consultations were to be made in case hostilities should occur.

Rapacki Plan. It envisaged making a central European Zone, free of nuclear weapons. This proposal was put forward by Polish Foreign Minister, Adam Rapacki. This Zone was to include Poland, Czechosolovakia, East Germany and West Germany. Russia supported this plan while U. S. and Britain rejected it as they felt that Russia, due to her possession of large conventional weapons, would gain by this.

Sino-Russian Treaty. By this, Soviet Russia gave a credit of 300 million dollars to buy equipment from Russia for economic development of China. By this treaty, China got back Manchurian Railway and Ports Arthur and Dairen. Complete Sovereiguty of Outer Mongolia was also confirmed.

Sino-Pakistan Border Treaty (2nd March, 1963). Pakistan signed a border treaty with China giving away thousands of miles of occbupied territory of Kashmir and one-fourth of K—2 promition. This is rather unfortunate as Pakistan had no locus standi ; for this was Indian territory.

It also signed an air-transport agreement and a trade agreement.

Sino-Burmese Treaty. China and Burma entered into a treaty of friendship on 22nd January, 1963 by virtue of which Burma agreed to cede certain border areas of Hipman, Guwhun ets. to China and the latter relinquished her mining rights with the Lupang area.

Sino-Nepalese Agreement. This treaty was signed in 1960 at Peking. It was mutually agreed upon to demarcate the entire boundary line keeping in view the tradition, custom and usage. Nepal gave up her claim over Mount Everest Peak. Now it could be climbed from both the sides, *i. e.*, from Nepal as well as from Tibet.

China promised to give an economic aid of 100 million rupees to Nepal and also to provide technical co-operation and training to the Nepalese youth.

Test Ban Treaty. Signed on 7th August, 1963, by U. S A., Britain and U. S. S. R. All tests in the atmosphere and under neath sea and on the ground have been banned. No ban however, has been imposed on underground tests. France and People's China have not signed the treaty. Almost all the countries of the world have welcomed this treaty.

Versailles Treaty of. The treaty of peace concluded after World War I at Versailles on June 28, 1919, between the Allied and Associated Powers on the one hand and Germany on the other. Germany had to cede Alsace Lorrain to France, Large areas to Poland, and smaller ones to Czechosolovakia, Belgium and Denmark, and had to disarm and reduce her land and naval forces. The Rhineland was to be occupied by the Allies for 15 years; the Saar Territory and the German rivers were to be internationalized, and the German colonies were administered by the alllies under the League's mandate. Germany was to recognise her sole 'war guilt', and to pay heavy reparations.

Western Union. An organisation of the 16 Western European States which received Marshall Aid.

Westminster, Statute of. It was passed in 1931. According to this, England gave equality of status to Dominions.

World Government. Many enlightened persons believe that to avoid World War, World Government is the only way.

CONFERENCE AND CONVENTIONS

Asian Relations Conference. An unofficial and non-political conference of academic, cultural and other organisations of Asian countries, interest in the study and promotion of international relations, held at New Delhi in March–April, 1947.

The subjects discussed at this Conference were :

1. National movements for freedom in Asia.
2. Racial problems and conflicts.
3. Inter-Asian Migration.
4. Transition from Colonial to National Economy.
5. Agricultural and Industrial Development.
6. Labour Problems.
7. Status and Services.
8. Cultural Problems,
9. Status and Movements of women in Asia.

The formation of permanent 'Asian Relations Organization' which was announced at the concluding session of the Conference on April 1, 1947, which has since been functioning at New Delhi as its headquarters.

Afro-Asian Solidarity (unofficial) Conference. The conference took place at Moshi in Tanganyka in February, 1963. This conference condemned Chinese aggression. China protested and put undue pressure to withdraw this resolution. India staged a walk out but under the pressure of China this resolution was changed into a recommendation.

1964 session was held at Algiers. It denounced U. S. Imperialism and the formation of Malaysia. People's fight for freedom in clonial areas was supported.

African Summit Meet. The first meet was held in May, 1963 at Addis Ababa. Heads of 31 African States met together and resolved that an organization be formed for the African unity. Eccnomic diplomatic boycott of South Africa was approved.

The second meet was held in July 1964, at Cairo. A permanent Secretariat was set up at Addis Ababa. Dr. Nakruma of Ghana proposed to set up a Federation for the whole of the African continent but this proposal for lack of support from the other members fell through.

Bandung Conference. Historic conference of 29 Asian and African independent nations held between April 18 and 24, 1955 at Bandung, Indonesia. The most important resolutions passed were :

1. Demand for ending the colonialism of the people who are still subject to alien subjugation, domination and exploitation.
2. Adherence to the principles of Panch Shila.
3. Universal Disarmament.
4. Ban on atomic weapons.
5. Demand for representation of Asians and Africans in the U. N. Security Council and admission in the U. N. of a number of Asian countries which were still being kept out.
6. Economic co-operation on the basis of mutual help.

Bretton Woods Conference. A conference of 44 Governments held at Brtton Woods (U. S. A.) in July, 1945. Its aim was to promote international monetary co-operation, to facilitate the expansion and balanced growth of internotional trade, and to help countries adjust their balance of payments. To attain those objectives, the conference recommended the institution of an International Monetary Fund and the establishment of an International Bank for Reconstruction and Development was accordingly established.

Colombo Conference. Conference held from time to time at Colombo (Ceylon) in which Commonwealth countries represented by India, Pakistan, Australia, Great Britain, Canada and Ceylon, participated. The main object has been to take steps to raise the standard of living and promote social welfare among peoples of South-East Asia. The conference recommended large subsidies to different countries, who agreed to contribute their shares according to their capacity.

Dumbarton Oaks Conference. A conference of representatives of the Governments of Britnin, the U. S. A., Russia and China held at Dumbarton Oaks in 1944, on the conclusion of the world war then raging. These representatives had no power to take final decisions. Their purpose was to formulate proposals and then submit a joint report to their respective governments. The Conference recommended the creation of "The United Nations" to replace the old League of Nations. The Conference also defined the purpose of this organization and outlined its proposed organs, *viz.*, the General Assembly, the Security Council, the International Court of Justice and the Secreteriat. The proposals were subsequently considered at the San Franciso Conference.

Geneva Conference, 1955. A conference of the heads of the world's four Big Powers—U. S. A., U. S. S. R., Great Britain and France which opend on July 18, 1955, at Geneva, capital of Switzerland.

Though no formal joint declaration was made yet the principle of peaceful co-exitence and a determind effort to reduce armaments was declared and President Eisenhower offered to exchange military secrets with the U. S. S. R. Though much hope was pinned on this conference, it achived no definite result; as no definite proposals were made and accepted by any side.

Geneva Convention. An international treaty regulating the treatment of the wounded in war. It was first adopted in 1864, revised in 1868 and finally replaced by the existing agreement of July 6, 1906.

Nine Power Agreement or Pact, 1954. This Pact was signed in October, 1954, by the nine Western nations, agreeing to re-arm West Germany in a new defence scheme committing British forces also to the European continent for the rest of the century.

Potsdam Conference. A conference between President Truman, Marshal Stalin and Mr. Churchill held at Potsdam, Germany, in July 1945. The principal decisions of the conference were : (1) Supreme authority in Germany to vest in the Allied Control Council in Berlin ; (2) Germany to be completely disarmed, and demilitarised and German industries to be eliminated or controlled ; (3) No Central Government for some time ; (4) Political parties to be allowed but electrol system to be developed gradually ; (5) Industrial monopolies to go and joint economic control by the Allies to be introduced ; (6) Reparation claims to be met by industrial removals ; (7) Peace not to be made with Germany until a Central German Government is established ; (8) Governments that were neutral during the war were made eligible to join the U. N. O.

San Francisco Conference. A conference of the representatives of the United Nations held in accordance with the decision reached at the Yalta Conference from April 26 to June 26. 1945. It drew up plans, for the establishment of 'The United Nations. The functions of the new organizaiion were primarily started as ; (1) to maintain international peace, (2) international co-operation in economic, social, cultural and humanitarian probelms. Organizational and procedural details of the proposed organization were also finalized at this conference.

S. E. A. T. O. A conference held in September 1954, attended by the representatives of eight nations—U. S. A., Britain, Australia, New Zealand, Pakistan, France, Philippines and Thailand—at Manila, capital of the Philippines, to draft a treaty for South-East Asian defence against aggression of expanding Communism backed by U. S. military power.

Seventeen Nations Disarmament Conference. Though this conference is in session in Geneva since March, 1962, no agreement has yet been arrived at. The following nations are attending the conference. U. S. A., Canada, Italy, Britain, U. S. S. R., India, Burma, Poland, Czechoslovakia, Rumania, Ethiopia, Nigeria, Brazil, Sweden, Mexico and U. A. R.

As the Partial Nuclear Test Ban Treaty has been signed (Aug. 1963) the chances of Disarmament Treaty are now brighter.

United Arab Republic (U. A. R.) On first February, 1958 was established a union between Egypt and Syria by virtue of which it would have one flag, one President and a common Army in N. W. (1961). Syria proclaimed herself to be independent, thus this Union came to an end. But soon after there were coups in Syria (1962), and Iraq (1963).

Formation of U. A. R. comprising Egypt, Syria and Iraq has now been proclaimed.

Yalta Conference. A conference betwen President Roosevelt, Mr. Churchill and Marshal Stalin held at Yalta in the Crimea in February, 1945. Apart from an agreement on military plans for the future the three heads took a number of important decisions on the occupation and administration of defeated Germany, future of countries liberated from the yoke of Germany and Italy, the future set-up of Polish Administration and proposals for a conference at Washington to thrash out details of the proposed permanent machinery of consulation. The confrence is also known as 'The Crimea Conference'.

RECENT

INTERNATIONAL MEETINGS AND CONFERENCES

Istanbul Conference (July 2o, 1964)

The initiative for this conference was taken by President Ayub of Pakistan. The heads of the states of Pakistan, Iran and Turkey met at Istanbul who discussed among many other topics of mutual interest, ways and means of securing close collaboration at political, economic and cultural levels between these three Islamic countries. It may be noted here for the information of the reader that all the three powers are the members of Cento and it may be conveniently concluded that this conference was called upon to assert the independence of these three Muslim countries of Cento from U. S. A.

Non-aligned Summit II (5 October, 1964)

Heads and Prime Ministers of 48 non-aligned states met in a second summit conference in Cairo on October 5, 1964. The delegations to this summit represented more than one half of the total population of U. N. Member nations.

After week long discussions a joint communique was issued calling for (1) complete and final abolition of Colonialism (2) complete disarmament (3) immediate action not to recognize Southern Rhodesia's independence if proclaimed unilaterally (4) settlement of international conflicts by peaceful means (5) adoption by the U. N, General Assembly of the declaration of peaceful co-existence (6) elimination of foreign bases in Cyprus (7) liquidation of the British military bases in Aden (8) relaxation of tension between East and West.

World Communist Meet (March 1, 1965)

18 Communist countries took part it this Meet. The peoples Republic of China bycotted it. The conference was held in Moscow in a closed door session.

The Fourth Afro-Asian solidarity conference which was also attended by the Soviet Union was held at Winneba in Ghana in May, 1965. A large number of countries from Asia and Africa took part in the deliberations. India sent an eight-man delegation led by Shri Gobind Sahai.

The conference called on the people of Asia and Africa to compel the U. N. O. to rectify its mistakes and to return to the principles of the U. N. Charter.

Algiers Conference

It was proposed to hold an Afro-Asian conference in Algiers on June 29, 1965 but the plans were suddenly upset by the coup in Algiers which overthrew the Ben Bella regime The new Boumedienne regime was anxious to see the conference meeting on the scheduled date but another incident forced the interested countries to postpone it to November5,

1965. This incident was a bomb-explosion which rocked the very building where conference was to be held. Unfortunately the conference could not meet even on Nov. 5, 1965.

India wanted that Malaysia and the U. S. S. R. should also attend this conference but China, Indonesia and Pakistan were opposing this proposal.

Bandung Conference

This conference attended by about 30 Afro-Asian countries was held to celebrate the 10th Anniversary of the first Afro-Asian Conference held at Bandung in 1965. The celebration lasted from April 19 to April 25, 1955. India was represented by the Union Food Minister, Mr. C. Subramaniam.

14th Commonwealth Prime Ministers Conference

The 14th Commonwealth Prime Ministers' Conference attended by all 21 nations was opened at Marl Borough House in London on June 17, 1965. India was represented by her late Prime Minister Shri Lal Bahadur Shastri.

Vietnam and Rhodesia were the main problems which engaged the attention of the member countries.

On Rhodesia, Britain was heavily fired by the African member who demanded stern action against Mr. Ian Smith's white minority regime. They went so far as to ask Britain to take immediate military action against the Rhodesian Government and promised full support.

Regarding Vietnam it was decided that a special Commonwealth Mission comprising of the Prime Ministers of Britain, Ghana, Nigeria, Trinidad and Cylon be formed to urge the concerning governments to hold a Peak Conference with a view to stop war in Vietnam. There was however difference of opinion on Mr. Wilson's choise as his government had already declared unilateral support for . S. A.'s Vietnam policy. We may say without hesitation that this conference was more or less a complete failure because nothing concrete came out of it.

Disarmament Conference

17 Nations are the members of this conference. It was first convened in Geneva (Switzerland's capital) in March 1962. There was a genuine desire on the part of the attending member nations to devise means of ensuring world disarmament. But unfortunately nothing has been achieved so far though several proposals and counter-proposals have been received for consideration. Following are the member-nations :—

Brazil, Italy; Canada, Czechoslovakia, **Ethiopia**, India, Italy, Mexico, Nigeria, Poland, Rumania, Sweeden, U.A.R., U.K., U.S.A. & U.S.S.R.

Arab Summit, III

The third Arab summit meeting held in Casablanca (Morocco) which took place on September 13 and lasted upto September 16, 1965 was attended by almost all the member countries except Tunisia which bycotted the meeting.

The attending member-countries signed a solidarity pact which called for an end to all kinds of antagonistic campaigns and support of subversive movements against one another.

The joint communique demanded the liberation of Palestine and urged support for the liberation movements in Angola and Mozambique. It also condemned the racial policy of South Africa and demanded the white Rhodesian government to resign in favour of majority Africans. It also urged India and Pakistan to end the conflict.

Among many other demands, the communique demanded the liquidation of foreign bases which threaten the ,security of the Arab world and international peace; President Nasser presided over the meeting.

Honolulu Conference (Feb. 6 to 8, 1966)

Presided over by Mr, Lyndon Johnson, the U. S. A. President, this conference which discussed the military situation in Vietnam and the U.S. economic and social aid programme to help the ky government, took place at

Honolulu, the Capital of Hawaii islands. U.S.A. wanted to improve the Ky government's position in the South Vietnamese countryside where the Viet Cong were gaining strength and influence both.

At the conclusion of the talks a joint communique was issued, which indicated larger U.S. commitments towards improving commitments the military and political situation in Vietnam in accordance with U.S. policies.

Tripartite Conference (New Delhi)

A Tripartite conference between Yugosolavia, U.A.R. and India took place in New Delhi on October 20, 1966. President Tito and President Nasser and Prime Minister Indira Gandhi represented their countries respectively.

The talks lasted for four days. A joint communique was issued in which greater stress was laid on war in Vietnam. The communique appealed to the U.S.A. to stop bombing the North Vietnam without any preconditions.

The three leaders expressed their firm belief that the implementation of the Geneva agreements of 1954 and the withdrawal of all foreign forces would lead to peace in vietnam and enable the Vietnamese people to determine their future by themselves without foreign interference. They also affirmed that the Viet Cong should participate as one of the main parties in any peace effort in Vietnam.

Expressing deep concern over the dangerous situation in South East Asia, they opined that the escalation or military operations in Vietnam threatened to develop a wider war.

The communique is clearly worded document and defined non-alignment without any attempt at quibbling. The policy of "non-alignment", it says, "stands against every form of imperialism, hegemony or monopoly of power and milltary alliance." This policy obliges those who accept it resolutely to oppose "colonialism and neo-colonialism in all their forms and manifestations which seek to curb the freedom of action of newly independent countries." One way of trying to achieve semi-colonialist objectives, it is specifically mentioned, is "the use of economic and financial assistance as an instrument of pressure," we in this country know how insidiously such pressure can be exerted and the cultural and moral backbone of an entire ruling class broken by a few thousands of propagandists and secret agents planted in the guise of advisers and experts. The communique gives credit to "many developing countries" for resting such pressure. We wish we could have claimed honestly, that, we, the biggest non-aligned countries in the world, had resisted such pressures with the determination and purposefulness or several smaller nations. If the New Delhi meeting helpes the Government of India unhesitatingly to resist all attempts by aid giving semi-colonialists to change its economic and foreign policies, it would have more than fulfilled its purpose

The most important concrete issue before those who participated in the meeting was the present situation in Vietnam. The communique makes it clear that India, the U.A.R. and Yugoslavia representing non alligned opinion in Asia, Africa and Europe unanimously demand the ending of America bombing of Vietnam, and withdrawal of all foreign forces from that country. As for the implementation of the Geneva agreements that will naturally follow these essential preliminary steps by American aggressors, the communique points out that "participation of the South Vietnamese National Liberation Front would be necessary as one of the main parties in any efforts for the realization of peace in Vietnam."

Manila Conference (October, 1966).

A conference of 7-nations sponsored by President Johnson of U.S.A. took place at Manila in the last week of October, 1966.

The communique issued at the end of the meeting was highly disappointing and caused great indignation throughout the civilized world.

The conference rejected out of hand the universal demand for a cessation of bombing of North Vietnam as a precondition for opening negotiations. It demanded on the other hand, that before any of the allied troops are removed, the North should withdraw its military and subversive forcees, infilteration ceases and the level of the violence subsides. "Even then the allied troops will not be removed. They will be removed only six months after these conditions have been fulfilled and it will be for the Saigon Govt. to decide and ask for the withdrawal of their forces and evacuation of their installations. Hanoi has been accused of aggression, of consistently refusing to apply the Geneva conventions, of encouraging subversion. This attempt to brand North Vietnam as the aggressor is of course needed to justify the allied intervention. "We are united in our determination that the South Vietnamese people shall not be conquered by aggressive forces and shall enjoy the inherent right to choose their way of life and their own form of Government. At the same time our united purpose is peace—peace in South Vietnam and in the rest of Asia and the Pacific."

The Manila Conference is not without significance. American motives have been exposed. Now it will be difficult for the U.S.A. spokesman to talk of peace. Any further peace offensive by Washington will be dismissed as the hypocritical prantings of maniacs who believe that they can delude all the people all the time.

CHARTERS AND DECLARATIONS

Atlantic Charter. Declaration issued by Mr. Churchill, war-time Prime Minister, following meeting some-where in the Atlantic on August 14. 1941. It contains eight points,

The countries declare that they seek :

1. No aggrandisement, territorial or other ;
2. No territorial change without the wishes of the people concerned ;
3. The restoration of sovereign rights and self-government to those peoples who have been deprived of them, and respect for the right of all peoples to choose their own form of government ;

4. To further access to trade raw material by all peoples.
5. To improve labour standards, social security and economic advancement ;
6. To establish a peace in which men may live out their lives in freedom from fear and want ;
7. To enable all men to traverse the high seas and oceans without hindrance ; and
8. To disarm the aggressor nations pending the establishment of wider and permanent system of general security and at the same time to aid and encourage all other practicable mearures for lightening the burden of armament.

Balfour Declaration. British Foreign Secretary A. J. Balfour promised in a letter dated on Nov. 2, 1917 to Lord Rothschild, Chairman of the British Zionist Federation promised establishment of the Jewish National State in Palestine without prejudice to the rights of the existing non-Jewish population.

Four Freedoms, The. President Roosevelt in his address to Congress on January 6, 1941, defined the "four essential human freedoms" as (*i*) freedom of speech and expression. (*ii*) freedom of every person to worship God in his own way, (*iii*) freedom from want, and (*tv*) frreedom from feer.

Magna Carta. "The Great Charter", extorted from King John by the barons of England on June, 15, 1215, that guaranteed various rights and previleges to the subjects of the realm, and established the supremacy of the law over the will of the sovereign. The Charter has ever since been looked upon as the foundation-stone of English political liberties.

IDEOLOGIES AND MOVEMENTS

Absolutism. System of government in which all the power is concentrated in the hand of one or a few at the top: The governed have no representation, vote or share in the administration.

Anarchism. (From Greek *anarchia* meaning *non-rule*). A term in political theory standing for the abolition of every organised authority and State machinery and the creation of a Stateless Society instead. According to anarchists, every form of government is tantamount to tyranny. They, however, do not advocate society "without order", They want to substitute government by a free association of individuals and groups based on voluntarily respected mutual treaties.

Bolshevism. It embodies the doctrines professed by the extreme left wing of the Russian Social Democratic Party *Bolsheviki*, which effected the Russian Revolution of 1917. It can be said to be an alternative name for Communism, drawing its inspiration from Karl Marx. But the founder of Bolshevism. as a practical policy, was Lenin who advocated revolution leading to dictatorship of the proletariat.

Capitalism. Name given to economic system in which the principal means of production, distribution and exchange are in the possession of private owners, who run them at their discretion with the "profit motive". The price mechanism determines what things shall be made, in what quantity and under what conditions.

Civil Disobedience Movement. Name given to the Indian Nationalist Movement inaugurated and led by Mahatma Gandhi. Truth and Non-violance were its two cardinal principles and the movement aimed at peaceful withdrawl of British authority from India. No-tax campaign of Bardoli (1928) and the Satyagraha of 1930–31 can be cited as examples.

Communism. The revolutionary Socialist movement basing its theory and practice on the teaching of Karl Marx. The "Communist Manifesto" issued by Marx and Engels in 1818 forms the basis of all Communist theory. A meterialistic interpretation of history, class war as an essential feature of social evolution and a violent over-throw of the capitalist system, which according to Marx is running through its period of decline, are some of the main bases of communist philosophy. The establishment of a classless and stateless society, where there will be no private property or exploitation of one class by the other and where human relationswill be governed by the high principle of "From each according to his ability to each according to his needs", is the ultimate aim of Communism.

Communist Manifesto. A manifesto, published in London, in 1858 by Marx and Frederick Engels, for the newly established Communist League, in which the fundamental assumptions of the Communist system were set forth.

Fascism. Fascism was a system of government evolved by Hitler and Mussolini. It is opposed both to socialism and parliamentary democracy. The fascist programme is nationallistic, authoritarian and anti-communistic. The social system aimed at by fascism is the Corporate State, wherein the individual has no right. The "Leader" occupies a very glorified position in a fascist policy ; he is not indentified with the State but is even assigned a higher place, for he gives to the Stats one form which it has. Fascist rule is described as "the rule of the wish". In place of equality, liberty and fraternity, it emphasises responsibility, discipline and hierarchy.

Federalism. System of government in which several States unite for certain matters of common interest but retain complete autonomy in internal affairs.

Feudalism. The rule of the landed aristocracy, characterised by a medieval economy in which property was concentrated in the hands of big feudal lords. The land was divided into feuds or fiefs and held on condition that certain military duties were performed. In default of this, the land reverted to the superior lords. It was the general political and economic system in Europe till the French Revolution in 1789.

Imperialism. The lust or passion for the extension of empire and advocacy of a policy that would lead to such an enlargement. Marx described imperialism as the work of a number of powerful caipitalists and financiars, who compete in securing foreign markets and sources of raw materials and send their people to war, the profit they hope to derive from their economic empires.

Isolationism. The body of political opinion in the United States of America that used to advocate non-interference in European affairs.

Jingoism. Provocative patriotism.

Laissez Faire. The theory that the State should refrain from all intervantion in economic affairs. The pharse originated with the 18th century French economists, the Physiocrats whose maxim was "let go and let pass", *i,e.*, "leave the individual alone and let commodities move freely."

Leninism. A term used as an alternative for Communism and as applied in practice in Russia under the direction of Vladimir Lenin.

Liberalism. The political and social theory associated with the Liberal Party in Britain and similar parties elsewhere. In politics, It stands for Parliamentary democracy, freedom of the Press, speech and worship and the abolition of class privileges. Economically, the theory has been associated with *laissez faire* and international free trade.

Liberty. A political term which has become closely connected with equality of opportunity, the freedom to develop one's potentialities and such freedom as religious liberty and freedom of speech etc.

Marxim. The socialist doctrine following the theories of Karl Marx. Its principal tenets are :

1. History is a series of class-struggle ;
(2) All wealth is the product of labour ;
(3) Capitalists pay the workers less and keep "surplus value" for themselves ;
(4) The exploitation leads to the creation of a starving proletariat, who rise in revolution and establish the dictatorship of the proletariat.

(5) Establishment of a classless and stateless society, whose guiding principle will be "from everybody according to his capacity and to everybody according to his needs." Marxism is a complete and consistent philosophy which has influenced almost every branch of political and economic thought during the last 70 years.

Monroe Doctrine. Doctrine enshrined in a message sent to the United States Congress, on December 2, 1823, by President James Monroe, declaring that "the American Continents, by the free and independent condition which they have assumed and maintained, henceforth not to be considered as subjects of future colonialism by any European Power."

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armed the authorities with exceptional powers for dealing with political offences and above all in the massacre of Jallianwala Bagh at Amritsar. The main phases of the campaign were boycott of Government institutions like Schools, colleges and law courts, abandonment of British goods etc. The Movement lasted for about two years, when it was suddenly suspended on account of the violence committed at Chauri Chaura in Uttar Pradesh.

Pacifism. The belief that violence should never be resorted to as a means of settling disputes. It advocates international peace at almost any price. The movement has staunch adherents in England and America.

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ИЗДАТЕЛЬСТВО · МИР

Popular Front. A suggestion for political collaboration of Communist, Socialist and other democratic parties against Fascism, put forward by the Communist International in 1925. Popular Front Governments were set up in Spain and France but could not last long.

Salvation Army. An International Christian Organisation run on semi military lines. It was established in 1877 under the inspiration of William Booth. Its social services include maternity homes, children's homes, industrial homes, slum posts and food depots. Particular attention is paid to reclamation of "down and out" criminals and discharged prisoners, prostitutes and unmarried mothers.

Sarvodaya Samaj. A Gandhian fellowship on an international scale started after the assassination of Mahatma Gandhi It is not an organization but a voluntary brotherhood of constructive workers who have faith in the Gandhian ideals of Truth and Non-violence. The central idea of the way of *Sarvodya* life is its basic creed. namely, insistence on the purity of means in the same way as of ends. "The Samaj naintains a register of Sevaks, *i. e.*, persons who believe in the Gandhian ideals of life and want to take part in realizing them." Khadi, Harijan uplift, service of the Adibasis, leprosy relief work and promotion of communal harmony form part of their activity.

Satyagraha. The name given to Mahatma Gandhi's movement of non-co-opration and non-violent civil disobedience.

Shintoism. Japanese religion or national faith. This is a mixture of Nature worship and loyalty to the reigning dynasty as descendants of the Sun god.

Socialism. A theory or policy of social organization which aims at or advocates the ownership and control of the means off production, capital, land, property etc, by the community as a whole, and their administration or distribution in the interest of all.

Totalitarianism. A policy in which everything—material mental, spiritual—is considered as belonging to or owing complete allegiance to the State, and individul liberty is permitted only after all the uncontrolled demands of the State have been satisfied.

Utilitarianism. A system of ethics which maintains that utility—the greatest good of the greatest number as Benhtham puts it—should be the guiding principal of the legislature.

Utopianism. A school of thinkers discribing ideal human societies in books. The Utopians hope to rich their aims not by revolution but by persistent propaganda of their ideas. Utopianism of the early 10th century can be said to be the starting point of modern socialism. Sir Thomas Moor was the first Utopian writer.

Zionism. A Jewish movement which aimed at the establishment in Pelestine of a Jewish State with its capital at Jerusalem—"The City of Zion". The Zionist organization, was established at Basle in 1897. In 1948, when Britain handed back the Palestinian mandate to U. N., the Jews Palestine proclaimed the State of Israel, and realised their long cherished ambition.

GENERAL TERMINOLOGY

(Constitutional, Diplomatic, Historical, Political, Legal, Medical, Economic, Geographical, Commercial, Scientific, Military and Naval)

CONSTITUTIONAL AND POLITICAL TERMS

Abdication. Renunciation of an office of dignity, usually throne, by a ruler or sovereign, whether voluntarily or by compulsion.

Adjournment. Postponement of the sitting of a legislature or public corporation until another fixed time.

Allegiance. The duty of obedience owed by a subject to a sovereign. The sovereign in return gives protection.

Amnesty. An act of government granting exemption from prosecution and punishment to political offenders or other convicts. The power usually vests in the Head of the State.

Anarchy. The term means the negation of ordered government. This term has been adopted from a phrase of revolutionary socialism associated with the names of Proudhon and Bakunin (leaders of anarchist movement). The ideal of society was one which should be without a government of any kind when every man should be a law unto himself.

Aristocracy. If the supreme governing authority is vested in the hands of a small class of wealthy people such a form of government is called Aristocracy.

Autonomy. A word of Greek origin meaning "self law" or "home rule". The Government of India Act, 1935, established Provincial Autonomy in the eleven Governor provinces of India.

Ballot. Secret voting.

Bicameral System. Form of government in which the legislature consists of two Houses, the Lower and the Upper. The House of Commons and the House of Lords in Britain or the House of Representatives and the Senate in the U.S.A., the Council of States (Rajya Sabha) and the House of the People (Lok Sabha) in India are examples.

Bye-Election. Election to a seat rendered vacant during the running term of the elected body. This might occur on resignation, death or any other subsequent disqualification of the member originally elected.

Cabinet. The Committee of Ministers holding the most important portfolios. They are responsible to the legislature and work under a system of joint responsibility. Meetings of the Cabinet are usually presided over by the Prime Minister. It is the Cabinet which decides the government's policy. Strict secrecy is one of the important rules of conduct for a Cabinet Minister.

Casting Vote. The deciding vote of a chairman in the case of a tie.

Coalition. A combination of two or more political parties with a view to forming a government. This usually happens either in times of national emergency or when a number of parties are returned to the legislature, but none of them commands a clear majority.

Confederation. Alliance of States for a particular common purpose. It is distinct from a federation in as much as it emphasises greater amount of independence to its constituencies.

Constituency. Body of electorates who form an electoral district to elect representatives to a legislature.

Constituent Assembly. A representative body of people created with the specific purpose of drawing up a constitution for their country

Constitution. The fundamental laws of a State, lying down the system of government and defining the relations of the legislature, executive and judiciary to each other and to the citizen.

Convention. A term denoting an assembly of representative persons delegated to decide important questions. It also means a 'temporary treaty'.

Coup d' etat. A sudden change of government by force, generally effected by the holders of Government or military power. It differs from a revolution in that it is made by persons of some position or authority, while in a revolution it is the mass that revolts and seizes power.

Democracy. A form of government in which the supreme power is vested in the people collectively and is administered by them directly or by their representatives. The ideal of democracy is "government of the people, by the people and for the people" Modern democracy has taken the form of a republic or a constitutional monarchy, the basic principle being always the sovereignty of the people expressed by the will of the majority-

Despotism. An arbitrary government by one vested with absolute power—a tyrant.

Diarchy. A form of government in which the supreme power of the State is vested in two person or bodies. In other words, it is a dual government. The Government of India Act, 1919, introduced a system of diarchy in the Indian provinces.

Dictatorship. Absolute rule of a person or group of persons without the consent of the governed.

Disenfranchisement. To be deprived of the right to vote.

Election. The act of choosing a representative by voting.

Federation. The act of uniting in a league for common political action in which all units are equal and each is self-governing and none is leader.

Franchise. The right of vote.

Fundamental Rights. Basic rights of an individual, i. e., rights to equality, liberty of expression and association, rights relating to religion and property, cultural and educational rights and rights to constitutional remedies etc. Modern practice is to make these rights a part of a country's written constitution, if there is one. They form an integral part of the Constitution of India.

Habeas Corpus Petition. A petition to a high court to issue order to a jailor to produce one detained in prison, and to state the reason of such detention.

Such applications are often made by friends or relatives of under trial prisoners, who are alleged to be detained in a high-handed manner by the Executive authorities.

Impeachment. Special trial of the head of the State or a Minister before Parliament or some high tribunal for offence against the State. In bicameral legislature, the Upper House generally acts as the tribunal and the Lower House as the prosecutor.

Manifesto. It is a declaration of policy by a political party, issued on the eve of a general election. In it, the party defines its future programme and the issues on which it proposes to contest the election. Famous example is the *Communist Manifesto* of Engels and Marx issued in London in 1848.

Monarchy. Monarchy represents that form of Government where the sovereign power vests in the hands of one single person. It is a government by an individual not subject to any legal limitations and who does everything "according to his will".

Under *Absolute Monarchy* the King is the head of the State both in theory and in practice.

In *Limited Monarchy* the powers of the monarch are not absolute but *limited* by the Constitution.

Money Bills. Bills involving financial commitments on the part of a government. Such Bills must necessarily originate in the Lower House as the House of Commons in England or the House of the People (Lok Sabha) in India. Whether a particular Bill is Money Bill or not is decided by the Speaker of the Lower House, whose verdict is final.

Ordinance. That which is obtained by authority. A short-lived temporary order by the head of a State or the Executive. Ordinances were a common feature of the British rule in India.

Parliament. The supreme legislature of Britain. It consists of the two Houses of Commons and Lords. Although the term is British in origin, many other countries have also started calling their legislature 'Parliament'. India in one of such countries.

Petition of Rights. This petition was drawn up by the British Parliament in 1621 and presented to Charles 1. It embodied constitutional demands which were conceded by the King under popular pressure and became a statutes called "The Bill of Rights". Petitions of Rights are in vogue even today. A person who intends proceeding against the King, must do so by a "Petition of Rights", *i.e.*, commence by petition for leave to initiate proceedings.

Plebiscite. A vote of the entire electorate taken on a clearly defined issue. The Saar Plebiscite in 1933 and the plebiscite which was proposed for Kashmir are examples.

Plural Voting. System allowing a person to cast more than one vote in the same election. The voter is eligible to vote in more than one constituency by virtue of his special position, *e.g.*, a city and a university vote may be enjoyed by the same person.

Poll. Term denoting the voting or taking votes at an election.

Polling booth. Place or station where voting takes place.

Preamble. Preliminary or introductory part of the statutes. It contains a brief statement of the need and advisability of having a particular statute or constitutional law passed. The Constitution of India starts with a Preamble.

Prerogative. Exclusive right or priviledge belonging to some one by virtue of his or her status.

Privy Purse. Allowance from public revenue for the monarch's private expenses.

Privy Seal. Seal affixed to documents that do not require the Great Seal. The keeper of this royal seal is called the Lord Privy Seal.

Proviso. Clause or stipulation or limitation in document.

Referendum. The principle or practice of submitting directly to the vote of the entire electorate, legislative or political questions of a controversial nature.

Republic. A form of government in which there is no hereditary sovereign. The supreme power of the State is vested in representatives elected by the people as in the United States of America or France or India.

Secular State. A State which does not patronize any particular community, creed or religion. All its citizens, whatever their colour, sex or religion etc. have full citizenship rights.

Statute. A written law expressly enacted by the legislature (as distinguished from a customary law or law of use and want).

Suffrage. The right or the exercise of the right of voting in political affairs.

Unicameral System. A system of government in which there is only one chamber of legislature.

Unitary State. A state in which all authority resides in the Central Government. The units and local governments derive their power from and are controlled by the Centre.

Veto. The right to reject proposed law or decision. The right of veto has been discussed in recent times in connection with the right of anyone of the five principal Powers to reject a proposed decision by the Security Council at the U. N. The frequent use of veto by the U.S.S.R. aroused considerable adverse comments in international circles.

Vote. Expression of a choice or opinion especially at an election. Voting is done either by show of hands or by ballot.

DIPLOMATIC TERMS

Ambassador. A diplomatic envoy of the highest order sent by one sovereign power to another. As personal representatives of their sovereigns, ambassadors enjoy many privileges and powers which extend also to their families and house-hold.

Annexation. The act whereby a State takes possession of the territory of another State or of territory belonging to no State.

Armistice. A short suspension of hostilities by agreement between the combatant parties.

Asylum. When a political refugee takes protection in a foreign country, he is said to have taken 'asylum'.

Attache. A junior member of an ambassador's suit. Attaches are of different types, *e. g.*, Naval, Military, Air, Commercial, Cultural or Diplomatic Attaches.

Balance of Power. The idea that the strength of one group of powers should be equal to the strength of the other group thus preventing any hegemony and ensuring peace.

Buffer State. A small neutral State between two greater States to prevent direct clashes between them.

Charge D'Affairs. When the head of a diplomatic mission is, absent from his post, he entrusts the conduct of his mission to the senior most officer of his staff who for the time being becomes the Head. Such person is known as Charge D'Affaires.

Consul. An official employed by the State to protect the interests of its citizens and to assist its trade in a foreign country.

Contraband. Goods the delivery of which to a belligerent by a neutral is forbidden by another belligerent in times of war.

Convention. A less important form of treaty. Conventions are concluded between governments and not between Heads of States.

Covenant. A mutual agreement entered into by two or more governments, *eg.*, the covenant of the League of Nations.

Credentials. A letter entitling the bearer to credit or confidence. Credentials are presented by newly appointed ambassadors to the heads of the State to which they are accredited.

De Facto Recognition. An act whereby a new government or State without being recognised formally is made a partner in international relations.

Embassy. The offices etc. of an ambassador in a foreign country.

Envoy. A diplomatic emissary sent to transact business in a foreign country—usually a diplomat of the second order.

Good offices. When a power offers its services for the purpose of easing controversy or avoiding war by peaceful negotiations between two countries, it is said to have offered its 'Good Offices'.

International Law. The body or law or collection of rules that civilized State regard as binding in their relations with each other. These exist in the form of numerous treaties, pacts, conventions and widely recognised international practices. A move to codify international law is in the offing in U. N. circles.

Legation. The official residence of a legate or ambassador.

Mac Mohan Line. The line which fixed the boundary between India and Tibet following the Simla Convention 1914.

Mandate System. The System under which the League of Nations entrusted the administration of former German and Italian colonies to certain powers. The League exercised a supervisory authority over the mandated territory of which have been now taken over by the Trusteeship Council of the U.N.

Mediation. To interpose between parties as a friend of both. This is something more formal than 'Good Offices' as a mediator has to conduct the negotiations himself.

Memoire. A type of memorandum addressed by the head of diplomatic mission to another head of a foreign State without formal introduction or signature. This is usually done at the end of an interview recording summary of the representations made verbally.

Neutrality. Non-participation in war between other countries.

Non-Intervention. A fictitious policy invented during the course of the Spanish Civil War (1935–39), by which the principal Powers undertook not to intervene, but in practice did so one way or the other.

Plenipotentiary. A person invested with full powers especially a special ambassador or envoy to some foreign country.

Protectorate. The relationship of a sovereign to a territory not recognised as sovereign over which the former exercises a direct or indirect control, specially in the sphere of external relations.

Protocol. The first draft of diplomatic document used especially for treaties before their final signature.

Reciprocity. Exchange of commercial privileges between nations.

Raparations. Indemnities to be paid by a defeated nation for the damage done in war.

Sanction. Penalties for a breach of a covenant or law. It has also come to mean an economic boycott of any Power that resorts to war contrary to its undertakings.

Status Quo. As the position was before.

Ultimatum. The last word before breaking of negotiations. It generallv takes the form of a written intimation that if a satisfactory reply is not received by a certain time or a certain date, consequences will follow.

OTHER POLITICAL TERMS

Apartheid. The term means the complete segregation of the white from coloured races as in South Africa, both politically and socially, so that they live and do their business separately. There is a rigid system of passses for any intercourse done to keep the supremacy of the white races.

Colour Bar. The term denotes the limitation by whites of social intercourse with non-whites. In its most virulent form it is manifested in South Africa and the U. S. A., where the Indians and Negroes are respectively discriminated against in every walk of life.

Conscription. Compulsory enlistment for service.

Fifth Column. The term originated from the Spanish Civil War (1936–39), when General Franco's troops in four columns attacked Republic Madrid from outside, while his supporters organised internal uprisings. These internal fighters were styled the 'fifth column'.Since then the term is used to describe enemy sympathisers within a country, who attack in the rear, either with arms or by propaganda.

Iron-Curtain, This term was coined by Mr. Churchill, to refer to the fact that all the East European countries now under the control or influence of the U. S. S. R. had been practically sealed off from the rest of Europe, so that nothing is known with certainty as to what is happening in these countries. This sealing off of a certain portion from the rest of the world is called the creating of an iron curtain. In particular.

Junta. A *de facto* or self-constituted committee which meets for political purpose. *e.g.*, the Junta in Spain under General Franco since 1936.

Maginot Line. French system of fortification along the Franco-German borders built in 1925 under the direction of Andre-Maginot, the then War Minister. It was outflanked by the Germans in 1940.

Marshal Aid Plan. This is the name applied to European Recovery Programme initiated by General Marshall, U. S. Secretary of State. Its object was to lend economic aid to anti-Communist Governments so that they might be able to stand on their own legs and thus stand up as a bulwark against the direct or indirect influence of Communism; which otherwise would have certainly thrown them into the arms of Russia. The countries that accepted American aid were.

Austria, Belgium, Denmark, Eire, Greece, Iceland, Italy, Luxemburge the Netherlands, Norway, Portugal, Sweden, Switzerland, Turkey, England and France.

Mikado. Official title of the Emperor of Japan.

National Anthem. A patriotic song played on official occasions, *e.g.*, 'God save the King' of Britain, or 'Jana Gana Mana' of India.

Nationalization. Taking possession and management by the State of land, trades and industries etc., with or without compensation.

Privy Purse. The amount set apart in the Civil List for the sovereign's personal use.

Proletariate. The propertyless classes who live by the sale of their labour.

Prohibition. Laws making illegal the sale of intoxicating liquor, which originated first in the U. S. A. In India the Congress Governments have introduced it invarious states though this means loss of much income to the exchequer.

Power Politics. The policy adopted by Big Powers in all their international relations whereby they act always with a view to what would maintain and expand the notional power without consideration of right and justice.

Purge. Cleaning by expulsion or doing away by treason trial all the unrealiable, unruly, disobedient or inconvenient members of a party.

Reconnaissance. Survey or examination of a tract of a country before military or engineering operations.

Regent. One who rules on behalf of a Sovereign in case of the Sovereign's minority, insanity or any other incapacity.

Sabotage. Wanton destruction of equipment by discontented employees. During war, it means destruction of vital war industries, line of communication etc. by enemy agents.

Stalemate—A deadlock.

Underground. Secret and organised opposition to the Government in power.

Vatican The. The palace of the Pope in Rome. Vatican is also used to describe the papal administration.

Westminster, Statute of (1931). Codified the relations between the members of the former British Empire and established the British Commonwealth of Nations.

COMMERCIAL AND ECONOMIC TERMS

Above Par. A price above nominal value.

Acceptance. It is signification by the person on whom a bill of exchange is drawn of his assent to the order of the drawer.

Advice. Any notification of business transaction apprising an agent, correspondent or customer that a thing has been done.

Attorney, Power of. A document authorising the person to whom it is given to act in all respects as wished by the grantor of the power, in relation to matters specified in the document. When the power is general it applies to everything in which the grantor is interested : when special, it applies to specific matters, such as the power to sign cheques, receive money, to effect sales etc.

Auditor. The person who carries out an audit of accounts. His chief duty is to ascertain the true financial position of the business and draw out a balance sheet in which this, is accurately set forth. The employment of auditor is compulsory in regard to the accounts of public bodies and limited companies.

Balance Sheet. A statement prepared from the account of a concern setting forth on the debit side the capital, its debts and other liabilities and on the credit side all the assets, including cash, property, etc.

Banker's Cheques. Cheques drawn by banks on each other.

Bearer Cheque. A cheque payable to a person holding it without requiring any endorsement. The words "or bearer" are added after the payee.

Black Marketing. Selling goods at a price many times higher than the controlled price— mostly to very needy customers—and behind doors or through agents (such people dare not sell goods in the open market for fear of apprehension).

Broker. An intermediary or agent in the purchase and sale of any goods; his remuneration being derived from commission or brokerage charged on a percentage basis on such transactions.

Bull. One who buys, or contracts to buy, shares on the expectation of a rise in the price with a consequent realisation of profits on them. In case the price falls he suffers a loss.

Capitalism. The economic system founded on free enterprise and private ownership of the means of production and distribution. The guiding force of the system is the profit motive. The risks and rewards are entirely those of the capitalists.

Cheque Crossed. A cheque is crossed for protection. The crossing is usually done by the drawer, who writes '& Co.' between two parallel lines across the face of the cheque after which the cheque can only be realised through a bank.

Cheque to Order. It is one having the words "or Order" following the name of the person in whose favour it is drawn, who must endorse the cheque before the payment can be obtained.

Credit, Letters of. A letter from a bank, firm or one person to another, authorising payment of a specified sum to a third person named in it for which the sender assumes responsibility.

Current Account: The amount of money a person had deposited in a bank and on which he can draw or add as much as may be desired, no interest being as a rule chargeable on either side.

Deed. A written or printed document under hand and seal. It must be signed in the presence of a witness or witnesses. It must bear a seal and must be delivered formally.

Demand Draft. A bill of exchange payable on demand.

Demurrage. A term generally used in connection with delays in removing goods after being conveyed to the station of destination, a certain fixed penalty for each day of delay being charged.

Dividend. A periodical payment of interest on an investment the payment being generally made out of profits.

Draft. This term generally denotes an order in writing to pay a certain specific sum of money.

Embargo. A temporary order from the admiralty of a country to prevent the arrival or departure of ships.

Excess Profits Tax. Tax introduced as a war measure in the last war to secure extra finance for the prosecution of the war. It was also used to check war profiteering.

Face Value. The nominal value marked on the face of a security—the par value.

Higher Purchase. A system for the purchase of goods by which they are obtained on hire and each payment is also treated as part payment of the purchase price.

Inventory. A list of all goods, effects, etc. in possession.

Letter of Credit. A letter written by one correspondent to another requesting him to cridit the bearer with a certain sum of money. It is not negotiable.

Limited Company. A company in which the liability of its shareholders is limited only to the amount of their shares.

Ordinary Shares. Such shares as have no special privileges or right attaching to them, but which receives dividends representing the profits after paying interest on preference shares and debentures and making provision for other necessary items.

Par. A price that is equivalent in nominal value.

Patent- An exclusive right granted under the law of the inventor of a new and useful invention or process of manufacture.

Payee. The person or firm to whom a bill of exchange or promissory note is made payable.

Preference Shares. Such shares as are issued at a fixed rate of interest and payable before dividends are declared on ordinary shares.

Profit Sharing. A method of remunerating labour, under which the employees receive, in addition to ordinary wages a share of profits of the concern. It is also an important method of securing industrial peace.

Stock Exchange. A place where the operation of buying and selling stock and share is carried on.

Tender. An offer to supply certain things, or perform certain services at specified rate, binding only after being accepted.

Trade Mark. A mark used for the purpose of indicating the legal right of some person to the exclusive manufacture of certain goods.

Turnover. The amount representing the total sales of a trador during a given period.

Treasury Bills. is a negotiable Government acknowledgement of short term loans and may be for three or six months.

OTHER TERMS IN ECONOMICS

Balance of Payments. List of items (goods, services, interest charges, capital movements, etc.) for which one country has to mark or receive payments from another.

Balance of Trade. The balance remaining in the total annual foreign trade of a country. May be (*a*) favourable when the value of exported goods of a country exceeds that of imported goods ; (*b*) unfavourable when the value of imported goods of a country exceeds her exports.

Bank Credit. The extra purchasing power created by banks over and above their cash balences because of public confidence in the bank's solvency.

Bank Rate. The minimum rate at which the reserve Bank will discount notes, bills of exchange or advance loans on approved securities.

Bill of Exchange. Credit instruments in vogue in a modern community *e. g.*, cheques, bank notes, government notes, book credit, etc.

Death Duty. Direct taxation of property at death and paid by the inheritor.

Deflation. Phenomenon of falling profits, wages, incomes and employment arising out of a decrease in the supply of money and bank deposites, relatively to the demand for media of exchange, so as to bring about fall in the general price level.

Depreciation of money. A fall in the value of money brought about by a rise in the general level of prices.

Devaluation. The term means the deduction in the valuation of the currency. This usually results in the currency dropping below its former value, specially gold. India devaluded its currency in June 1966, as has been done by England and many other countries in the sterling area.

Direct Tax. A tax under which the impact and incidence falls on the same person.

Foreign Exchange. The mechanism by which the payments in connection with international trade are transacted.

Free Trade. The system of unlimited international commerce without protective tariffs or other discrimination against foreign goods in favour of domestic products.

Inflation. A phenomenon that occurs when the supply of money and of bank deposits circulating through cheques increases, relatively to the demand for the media of exchange, so as to bring about a rise in the general price level developing into a spiral wherein cost and prices chase each other.

Money Market. A term referring to the financial institutions like bank discount houses, brokers, stock exchange, etc. which compete with one another for borrowing and lending money.

Monopolies. A concern or combination of concerns having the sole control over the supply of a particular commodity or service being thereby in a position to determine the price of the commodity.

Progressive Taxation. A principle in taxation under which larger precentage of the value of the income or of the property is taken away in taxes as the income or the property increases in amount.

Public Debt. The various loans raised from time to time by the Government for meeting State expenses of a non recurring nature.

Rate of Exchange. The ratio at which domestic currency can be exchanged against foreign currency.

Real Wages. The amount of necessaries, comforts and luxuries which the labourer can obtain for his services.

Speculation. The buying and selling of shares and securities in a stock exchange with a view of gaining profit from future changes in prices.

Sterling Area. Countries of the world whose monetary units are linked to the pound-sterling, as for example, the countries of the Commonwealth of which Canada is the exception.

Trade Mark. Any name or distinctive mark given to goods for sale, which are the production of a particular individual or firm. No other firm can produce that trade mark as its own if it has been registered.

Trade Unions. A contiguous association or wage earners for the purpose of maintaining or improving the conditions of employment.

Trusts. A form of combination under which the controlling share-holders of various companies pass on their shares to a board of trustees who hold them in trust for them.

Utility. It signifies the intensity of the desire for particular commodity ; it is measured in terms of the money which one is prepared to forgo for the commodity in question rather than go without it.

GEOGRAPHICAL TERMS

Afforestation. The process of replanting forests, with the purpose of either meeting serious shortage of timber, or preventing land erosion and flood and also increasing the food supply of the country by planting fruit bearing trees. In our country,Mr. K. M. Munshi, when he was the Food Minister, vigorously carried on this plan called Vana Mahotsava campaign.

Axis. The imaginary line round which the body rotates and which passes through the imaginery points called poles. Thus axis of the earth is inclined 23.1/2° from the vertical relative to its path round the sun and the consequent inclination causes the seasons.

Comet. A heavenly body of a luminous and nebulous appearance that moves round the sun in an orbit which is usually an elongated ellipse. A comet consists of a nebulous head, made up of an enormous number of bodies like dust particles, a cone of gaseous matter that surrounds it and a tail which is often millions of miles of length. Its appearance is often regarded as ominous. A well-known comet is the Hailey's Comet.

Constellation. The term denotes a group of fixed stars. They are generally considered as representing mythological figures like the Great Bear, Origin, etc., in the Northern Hemisphere.

Contour. In physical geography, the term refers to the form of the surface of a country. On maps, this denotes the line joining all places of the same height above sea level.

Coral. Name given to the hard skeleton of various marine organisms known as arthozoa. Tneir skeleton is composed of carbonate of lime extracted from the surrounding water. They live in large colonies and it is from their accumulated skeleton that coral reefs are formed.

Corona. A circle of light which surrounds the sun seen during eclipse.

Carter. The mouth of volcano, which is usually cup-shaped. Through its vent lava etc. is erupted.

Cyclone. A whirling mass of air, which often occures in the tropics and moves in the direction of the prevailing winds, usually in the direction of the pole.

Dam. An engineering structure built to hold up waters so as to prevent floods, provides water for irrigation and produce hydro-electric power. Such dams are being built in our country on all major rivers. Examples of dams are the Aswan Dam on the Nile, the Boulder Dam in the U.S.A. on the Colorado river, the Nizamsagar Dam, the Lloyed Dam in Sind, the Govind Sagar Dam of the Bhakra-Nangal Project in Punjab, the Hirakud Dam etc., etc.

Delta. A tract of land in the shape of a triangle, more specially the land enclosed by the branching arms of a river where it has divided before entering the sea. It is most usually formed by fine silt brought down by a muddy river and deposited at the mouth due to its flow being held up by the sea. The most notable deltas are those of the river Ganga and the Nile.

Desert. A barren tract of land devoid of vegetation due to very low annual rainfall or entire absence of rain.

Earthquake. A shaking or convulsion of the earth's surface due to sudden earth movements caused by the cooling of the planet, or sliding heavy rocks on a line of fault at its base.

Eclipse. The obscuring of heavenly body, the intervention of a heavenly body between it and the observer.

Equator. An imaginary line encircling the earth at equal distances from the poles. It is the dividing line between the North and the South hemispheres. It is the zero latitude of our maps. Its length has been computed at 24902.8 miles.

Erosion. The wearing away of the earth by such agents as water, wind and ice.

Fauna. Term denoting the representative of the animal kingdom found in a particular geographical region.

Flora. Name given collectively to the plant life of a country or of a particular region.

Fog. When warm moist air meets cool air or water or cold ground, some of the water vapours are condensed on the particles of dust floating in the air. This cloud of condensed vapour is called fog.

Fossil. Organic remains of animals which have remained preserved in rocks.

Geyser. A natural spring which at more or less regular intervals explosively ejects into their columns of steam and hot water. Most remarkable examples of them are: The Great Geyser, north of Reykjavik in Iceland. Yallowstone National Park, U.S.A.

Glacier. A great compact mass of ice which originates in the snowfields above the snowline and moves slowly down the valley as a river.

Gulf Stream. An ocean water current which issues from the Gulf of Mexico, flows northward off the coast of the U.S.A. and then crossing the Atlantic visits the coast of northern Europe till it reaches the Arctic Ocean, keeps the ports of Europe free of ice.

Icebergs. Detached portions of glaciers which float into the sea.

Igneous Rock. Rock which has been melted and hardened again.

Isobar. A line drawn on maps and weather charts linking all places where the barometric pressure is the same.

Isotherm. Line drawn on maps joining all those places, which have the same temperature either at a given time or over a given period.

Isthmus. A narrow stretch of land connecting two large portions of water.

Latitude is the angular distance of a place on the surface of the earth from the equator. It may also be described as the angle between the plumb line direction of a place and the plane of the equator. It is measured in degrees, minutes and seconds.

Lagon. A shallow salt water lake communicating with the sea, but separated from it by a bar or sand mound.

Leap, Year. A year of 366 days occurring every fourth year and devised in order to allow for the fact that the duration of the earth's revolution round the sun is about 365.1/4 days. Thus by the addition of a day every fourth year, the correction necessary to cause the seasons to fall in the same months of every year is made.

Loam. Soil containing about equal parts of clay, sand and humus.

Light Year. Unit to express stellar distances, each being 6000,000,000,000 miles.

Lithosphere. The outer solid crust of the earth which forms the land mass of the different continents and islands. It consists of a loose layer known as the soil and the several miles thick mass of hard rock on which lies the soil.

Longitude. Angle between the terrestrial meridian drawn from the pole through a place and a conventional point from which the angle is measured. The Standard Meridian is now taken as Greenwhich. As the earth turns through 36% in 24 hours, 15% of latitude represents one honr of difference in time from a place.

Multi-purpose Project. A project designed for several simultaneous purposes, as, for instance, for irrigation, hydro-electric power, flood control, navigation, prevention of soil erosion, fish culture etc.

Meridian. An imaginary great circle passing through the poles at right angle to the equator.

Meteors. Small pieces of solid matter which appear in the earth's atmosphere as shooting stars.

Meteorology. The science of atmosphere with its associated phenomena, weather.

Milky way. Also called Galaxy, is a belt of stars encircling the heavens and consisting of dense clouds of stars. It is very clearly visible on clear nights.

Mist. Mist is a fog with the difference that it contains a large number of particles of moisture than the ordinary fog. It thus, wets bodies more than fog does.

Monsoon. Rain bearing seasonal winds which blow from the S. W. from across the Indian Ocean during the months of April to September and visit India and countries of S. E. Asia.

Oasis. Fertile places in a desert, due to the water bubbling up in some of the valleys.

Orion. A famous constellation of the heavens, of nearly a hundred stars, all visible to the naked eye. Seven of these are very bright, three of which in a straight line form Orion's belt. The name is derived from a Greek mythological figure.

Planet. A celestial body which revolves in an elliptical orbit round the sun.

Mercury, Venus, the earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto are all planets.

Pole. Name given to the extremities of the imaginary axis of the earth round which it revolves.

Pole star. The star which is nearest to the celestial North Pole from which it is at present 1° distant. It is the brightest of the Ursa Minor Constellation.

Rabi crops. Winter crops like wheat, millets, grams, seeds, etc. in India.

Rainbow. An arch formed in the sky, caused by the refraction of rays of light by rain globules. The colours of the bow are in the order : violet, indigo, blue, green, yellow, orange and red (vibgyor).

Relief. The surface features of any part of a land as regards its elevation and depression.

A Relief Map is one in which the form of country is expressed by elevations and depressions of the material used.

Rain shadow region. A region which has a relatively light average rainfall because it is sheltered from the prevailing rain-bearing winds by a range of hills.

Satellite. One of the small members of the solar system attended on the large plants by which their movements are controlled. The earth has (the moon), Mars, Jupiter, Saturn, Uranus and Neptune.

Stratosphere. That part of the atmosphere beyond 6 miles from the earth wherein the temperature is constant and is usually—55°C.

Sun spots. Dark irregular markings upon the Sun's disc which are generally circular or oval in shape. They increase and decrease in number over a regular period of 11 years.

Thunder. It is caused by violent charges in the electrical condition of the earth and a cloud or clouds and the air between them.

Tide. The regular rythemic ebb and flow of the sea occurring usually twice each day due to the inequality of the moons attractive force on the solid and liquid portions of the earth.

Tides (Spring and Neap). Neap tides are which occur at the first and third quarters of the moon and are the lowest.

In these positions the sun and the moon are diametrically opposed, being at 90*, and the forces of pull act against each other, hence the tides are the lowest.

Tropic of Cancer, Tropic of Capricorn. The Tropic of Cancer is the 23°, 28° parallel of latitude north of the equator; while the Tropic of Capricorn similarly is the latitude running at 23°, 28° south of the equator. These two latitudes are the northernmost and southernmost limits of that area of the earth's surface in which the sun can be directly overhead.

Troposphere. The atmosphere layer which extends from the earth's surface to the startosphere. As a general rule the higher we rise, the lower will be the temperature in the troposphere.

Tundra. Great tracts of marshy land covering the northern regions of Asia, Europe and America round the Arctic Circle. They are mainly covered with mosses and lichens.

Typhoon. Violent storm that occurs between July and October along the eastern seaboard of Asia between Philippines and Japan.

Valley. A low land between hills and mountains, caused generally by the corrosive action water.

"Van-Mahotsav" or the planting of trees ceremony, observed during the rainy season every year. The object is to make the public tree-minded and also that there be no unnecessary and thoughtless cutting down of trees in the country.

Volcano. A passage or pipe in the earth's crust from which are ejected molten rock, lava, ashes, gases etc. It is usually cup-shaped with a pit-like opening called the crater.

Watercycle. The cycle of evaporation and condensation by which water goes through in nature.

Weather charts. Charts compiled from readings of temperature, barometric pressure, humidity, wind directions and force and electricity of the air, etc., gathered from all parts of the world including weather ships and aeroplane.

Weathering. The process by which rocks are broken up by the action of winds, moisture. cold and heat.

Weather forecasts are made from the collection of weather reports, barometric heights, direction of winds, thermometer readings and such like data.

MILITARY AND NAVAL TERMS

Aileron . A hinged or pivoted control flap on the wing of an aeroplane.

Aircraft-Carrier. A large warship aerodrome fully protected and armed, carrying planes which can take off from its deck and return to it afterwards.

Air-ship. A large bloated or gas filled envelop fabric, lighter than air, depending for its buoyancy on the gas pressure.

Arsenals. Government manufacturing factories which produce military and naval requirements.

Armaments. Forces armed and equipped for war, but chiefly munitions such as big guns and fortifications.

Asdic. This word is an abbreviation for Anti-Submarine Detector Indian Committee which invented an apparatus for detecting the presence of enemy submarines under water by the use of radio waves. It was used during the Second World War.

Armistice. A short suspension of hostilities by agreement between combatant parties.

Armoured Car. A metal-plated car carrying a mounted machine-gun encased in a small revolving turret.

Atom Bomb. A bomb manufactured by the Allid scientists in the U.S.A. during the Second World War. Its power lies in the energy released in the chain reaction set up by the splitting of the atom. It has the explosive power of 20,000 tons of T. N. T. and derives it from atomic fission. Only two bombs were dropped on Japan and they wiped off the cities of Hiroshima and Nagasaki.

Balloon Barrage. Obstacle for hostile aircraft by balloons floating at a height in order to guard docks, workshops, and ammunition factories etc·

Battle Cruiser. A large cruiser lightly armoured with great speed and hitting power.

Battleship. It is a formidably armed, heavily armoured, very mobile floating fortress which can hit harder and better repulse all forms of attack than any other warship. It can inflict the utmost destruction and withstand the maximum punishment and is the most powerful fighting ship that is possible of construction.

Beacons. Flares of arc lights on the ground to Indicate to aviators where they may safely land.

Bren-gun A type of machine-gun. light and rapid.

Camouflage. The skilful concealment of troops or guns by using natural objects, such as branches of trees, to afford cover from air attack, or at sea the painting of ships and the erection of funnel so as to deceive the enemy in respect to the direction of its movement.

Convoy. A ship or ships of war guarding a fleet of merchant vessels and bringing them safely to port under escort; also the escort of supply lorries.

Cruiser. It is a fast type of warship used in naval warfare which has adequate protection and substantial armament Superior to all other types of warships except the battle cruiser.

In modern warfare its main function is to patrol the principal ocean highways for the defence of the sea-bound trade of its century, search out and destroy enemy surface raiders and other hostile crafts and act as a scout for the battle fleet at sea.

Destroyer. It is a class of very well-armed, but unarmoured warships, between 900 to 2,000 tons displacement. It is a handy utility vessel mounting from 4 to 8 guns, a number of torpedo tubes, numerous light anti-aircrafts weapons and depth charge throwers. It was used in the Second World War to destroy submarines and to protect convoys.

Dive Bomber. A bombing plane that dives down and comes close to the target before dropping its bombs and zooms up quickly to avoid a smash. The German Stuka planes were dive bombers.

Fuselage. The part of an aeroplane or seaplane which forms the main body to which all the other parts are attached.

Machine.gun. Quick firing small arm with gun mechanism of loading and firing, operated by the recoil or discharge or by the explosion of gas.

Mortar. A short and very thick piece of artillery of large calibre, firing heavy shells at a fixed angle of 45° or thereabouts.

Parachute. A collapsible umbrella-shaped device. attached to the person of an airman, which, when released, opens out and carries the airman down to safety, by retarding his too rapid fall or descent.

Pom Pom. Name given to one.pounder quick firing shell gun from its sound.

Rocket Bomb. It is an aluminium tube 50 ft. long, tapering to a warhead point, carrying a ton of explosives. Below this are the radio receiver, alcohol and oxygen tanks. When fired, it rises to a height of 70 miles and attains a speed of 2,000 m. p. h. and is aimed at the object which is meant to be destroyed by gyroscopic control. This type of bomb called the V bomb by the Germans was used by them during 1944-45 especially against London.

Submarine. Essentially an underwater craft which submerges espscially to fire torpedoes. It has a round or square coning or look out tower and a periscope or reflecting instrument which are its eyes under water.

Tommy-gun. A self-loading rifle called after its inventor John T. Thompson.

Torpedo. A self-propelled submarine weapon of offence, usually cigar shaped, carring a charge of gun cotton.

Torpedo-Boat. A small swift warship specially designed to attack by discharging torpedoes.

Tracer Bullet. A bullet which leaves a smoke trail to mark its course.

V-I or the Flying Bomb. A bomb carried in small pilotless aircraft, moving by jet propulsion, first used against southern England by the Germans in the summer of 1914.

V-II or the Rocket Bomb. It is a rocket carrying load of high explosive, flying faster than sound (more than 3,000 m.p.h.) first used by the Germans.

SOME MORE MILITARY AND NAVAL TERMS

Alert. A alarm given to serve as a warning about the approach of enemy ground, sea or air forces.

Base. The point from which the operations of a campaign are conducted. It is from a base that the supplies and reinforcements are sent to units fighting in the front.

Battalion. A military unit numbering between 500—10000 men at war strength. It is formed of four gun companies at least one of which is a machine gun company. It is commanded by Lieut. Colonel.

Battery. The basic unit of field artillery consisting of a number of cannons with their equipment. The latter usually consists of six guns and gun carriages, munitions and stores, horses, mules and military mechanized vehicles while the unit is officered by a major, a captain second in command, commissioned and non-commissioned officers and their men.

Cadet. A young man in training for the rank of an officer in the navy or army.

Canteen. A military refreshment place where the rank and file of a regiment may purchase the ordinary necessaries of life like tea, coffee, groceries, alcoholic drinks etc.

Commandos. Name given to British troops which were employed during the 2nd World War in raiding enemy occupied territory on a scheme of "amphibious guerilla warfare, or hit and run methods".

Concentration Camps. Prison camps for political prisoners. These refer specially to the camps used by the Nazis for the detention and later on for the mass extermination of the Jews and other political opponents.

Crack. Slang used for the best, *e.g.*, crack troops.

Division. A unit of the army, commanded by a general and containing all branches of the service.

Dug out. A shelter hastily dug out under ground.

Flagship. The ship of a fleet which flies the flag of its commanding officer and from which orders are sent to the rest.

Grenade. A shell or hollow ball of iron charged with an explosive and provided with a fuse ; explodes soon after the fuse has been melted and burst into fragments.

Guerillas. Band of armed irregular troops who take part in the war simply to harass the enemy, capture its stragglers and supplies and use infiltration tactice against it.

Incendiary Bomb. A bomb containing inflammatory matter, usually dropped by aircrafts as did the Germans in the Second World War.

Magazine. A specially constructed building for storage purposes specially of gunpowder or other explosives or other type of ammunition.

Mines. Explosive charges used for the destruction of enemy fortifications or shipping.

Magnetic Mines. These consist of a magnetised metal container with a sensitive projecting detonator. It is laid in the sea just below the surface and when a ship either touches or passes near it, it shoots at it and destroys it by its explosion.

Pontoon. A floating bridge, especially one constructed to enable troops to cross a river.

T.N.T. Trinitrotoluene. It is a powerful explosive, and is a yellow crystalline solid prepared from toluene by the action of mixture of concentrated nitric and sulphuric acids.

SCIENTIFIC TERMS

Absolute zero. The lowest temperature which can possibly exist, equivalent to 273.

Acuostics. The science of sound, whereby the various phenomena of sound waves are investigated.

Adaptation. In biology it means the emphasis on and growth of certain characteristics which prove useful in survival.

Adenoids. A mass of tissue which obstructs the passage between the nose and the throat.

Aerial Wireless. The wires which transmit or collect electrical waves whereby communication is set up.

Air Base. A base from which all-air-force units operate.

Air Pocket. Aregion of rarefied air, or air with a downward current into which aircrafts drop.

Airship. A type of lighter-than-air machine which has developed from the free balloon. *The Graf Zeppelin* was one such airship.

Air conditioning. Artificial treatment of air in buildings to control temperature and humidity.

Alternating Current. Electric current which periodically varies in magnitude and direction. Starting from zero, increasing to maximum, decreasing to zero again increasing maximum and decreasing to zero in reverse direction.

Alpha rays. Are positive particles, given off by certain radioactive substances, like polonium, radium thorium, plutonium etc. and have lower velocity and smaller penetrating power than other radiotions.

Altemeter. Is a type of aneroid barometer that shows altitude above sea level.

Ampere. Unit of intensity of electric current : current sent by 1 volt through 1 ohm.

Anemometer. Is an instrument which records the speed of winds in miles per hour or kilometers per hour.

Aneroid Barometer. Is the type of barometer which indicates atmospheric pressure when air presses against the side of a vaccum box.

Archimedean Law. It states that a body wholly or partially immersed in a fluid loses in weight by an amount equal to that of the fluid displaced.

Armature. Core of luminated copper were, the part of a dynamo which rotates in the magnetic field.

Arson. The malicious burnnig of a dwelling house or outhouse of anther man.

Astigmatism. Is a defect in the eye due to the lens of the eye having different curvatures in different directions. It is corrected by spectacles with cylindrical lenses.

Atmospheric Pressure. It is exerted on the land and sea surfaces and comes from the weight which posseses.

Atom. Name given to the smallest discreet particles of which all matter is composed.

"There are 92 kind of atoms which differ in chemical behaviour and correspond to the 92 elements which cannot be broken up by chemical means into anything simple."

Atomic Energy. Is the energy obtained by the splitting of the nucleus of the atom by fission.

Atomic Weight. The last weight,of a chemical element that is present in a molecular weight of any of its compounds. Atomic weights are the relative numbers or ratios, not absolute weights, The unit taken is the atomic weight of oexygen which is 16.

Auricle. Name of the upper chamber of heat. The left receives pure arterial blood from the lungs, the rights auricle receives impure vanous blood from the body through the big vein, the vana cava.

Aorta. The largest 'artery in the body which issues from the left ventricle of the heart and gives off arterial i. e., oxygenerated blood to all parts of the body except the lungs.

Automobile. Self-moving or self-movable vehicle. Specially used for a vehicle propelled by an engine worked by petrol.

Broadcasting. Distributing from a station by wireless telegraphy, news, lectures, music etc. for general reception.

Binocular. Any optical instrument, either a telescope or a microscope or field glass which has two eye-pieces, so that both the eyes use instrument simultaneously.

Capillary. One of the tiny blood vessels connecting the arteries and veins.

Cathode ray tube. A tube in which electrons are caused to travel at high velocities as in an X-ray or a television tube.

Chain Reaction. A reaction caused by the bombardment of an atomic nucleus, which releases enough energy to start a series of similar reactions.

Chlorophyll. The green colouring matter in plants.

Cloud Seeding. Putting dry ice or chemical into cloud to cause the moisture to fall.

Cyclotron. An electrical and magnetic device which accelerates atomic particles to bombard nuclear atoms.

Cytoplasm. The protoplasm in a cell outside of the nucleus.

Centipetal Force. The force which tends to pull whirling objects towards the centre of reaction ; the force equal and opposite in centifugal force.

Carburetter. An appearatus mixing air with petrol vapour for combustion in motor vehicles.

Cardiogragh. An instrument for recording the movements of the heart by tracing them up.

Cellulose. Consisting of cell or the substance forming solid framework of plants.

Centigrade Thermometer. Has 0° as the freezing point of water, and 100° as boiling point of water.

Catalysis. Chemical proces whereby the speed of a reaction is altered by means of the introduction of another substance in the process ; this substance called the catalyst remains itself unlattered. Common catalysts include plantinum oxide, iron, nicle, zinc etc.

Centtifugal force : The force with which a body revolving around the centre tends to fly off.

Chronometre : Instrument much like a watch in size and shape for measuring time with particular exactitude.

Crystal : Substance having a definite internal structure and shape for measuring time with particular exactitude.

Crystal : Substance having a definite internal structure and definite external form. It is a poly hedron bounded by natural plane surfaces.

Cromosphere : Rarefied layer of gases surrounding then us and lying outside photosphere.

Chromozone : Spindle-like form assumed by the chromation network of a cell nucleus during the process of cell division. It is supported to be the carrier of hereditary factors.

Dew point : The temperature at which water vapour begins to condence.

Dictaphone : An apparatus into which letters etc. can be dictated.

Diesel Engine : An internal combustion engine invented by Dr. R. Diesel of Munich in which heavy oil is used as fuel.

Dynamo : A machine converting mechanical energy into electrical energy by rotating coil of copper wire in a magnetic field.

Electron : A minute particle charged with negative electricity or a unit negative charge having eneritia, normally forming part of an atom but capable of isolation as in cathode rays.

Electrocution : Killing by electricity as capital punishment (U.S.A.).

Electro-Magnet : A magnet made by passing an electic current (D.C.) though a coil of were wound about a piece of soft iron.

Electro-meter : An instrument for measuring minute difference or voltage, or the quantity of electricity.

Electro-motive Force : The force which pushes an electric current through a conductor.

Electron Microscope : Design of microscope in which the specimen is illuminated by electrons which are focussed by means of specially shaped magnetic fiilds. (The electrons are employed because they have a very much smaller wavelength than light and can, consequently, be used to observe specimens very much smaller than could be observed by sunlight, for examele, viruses and molecules).

Electroplating : Plating substance wiih a metal by esing an electric current flowing ihrough an electrolyte.

Electrolysis : Breaking down a chemical compound into its parts by *use of an eledtric current.*

Embryo : The earliest stage in the development of a plant or animal.

Emulsion : Mixture of liquids one suspended in another. Milk is an emulsion.

Efflorescence : Is the losing of water of crystalization by a substance on exposure to air, *e.g.*, washing soda efflorescences in air.

Engenics : The science of race improvement by judicious mating.

Fungus : A plant which cannot make it own food because it lacks chlorophyll.

Fertilizers, artificial. Chemically prepared substances which add to the fertility of the soil-like nrtural manures are called artificial fertilizers. They include (1) nitrates and other nitrogenous compound, (2) phosphates. Sodium nitrate prepared from air is an example. Another is ammonium sulphate.

Gama Rays : Specially penetrating rays emited by radium and other radio-active substances.

Gravity. The forces of attraction between masses of matter. The gravitational pull upon falling bodies produces an acceleration 32 ft. per sec.

Helicopter. The flying machine rising vertically by means of air screws revolving horizontally.

Heliograph. An instrument for sending messages over long distances by flashing sun's rays from a mirror.

Hydrometer. Instruments for measuring specified gravity of liquids.

Hydroscope. Instrument for observiug the bottom of body in water.

Hydrophone. Instrument for lestening to sound transmitted through water.

Infra Red Rays. Invisible heat rays of the spectrum, before the visible red part of the spectrum. When they fall on anything they warm it.

Iron Lung. Instrument for restoring lung movements of paralysed muscles, specially in poliomyelstis.

Kaleidoscope. An optical instrument for presenting constantly varying patterns. It consist of a tube containing pieces of coloured glass.

Larva. The warm-like stage in the life-cycle of insects, such as moths, flies and mosquitoes.

Lever. A bar turning on a pivot or fulcrum.

Linotype. A machine used for setting up type matrices and casting bars of type in complete lines by mechanical operation.

Lithography. The art of writing or engraving on a kind of yellow slabby limestone and printing therefrom.

Meteor. A shooting or falling star or any such phenomenon in the sky.

Metric System. A decimal system of measurement based on the meter as the unit of length and the gram as the unit of weight.

Meteorology. The science which treats of the phenomena of the atmosphere as regards weathere and climate.

Microphone. An instrument that converts sound waves into electrical waves.

Microscope. An instrument with high power of magnification used for observing minute objects.

Microtome. Instrument used for cutting very thin sections of objects for examination by the microscope.

Phonogram or Phonograph. An instrument by which words or other sounds can be recorded and afterwards given out again, almost in the original tones.

Photo-synthesis. The formation of starch and sugars in green plants by the action of sunlight absorbed by chlorophyll.

Polariscope or Polarimeter. An instrument for determining the amount of polarization of light.

Proton. One of the particles of the nucleus of an atom which has a positive electric charge, the other being Neutron which has no charge.

Protoplasm. The living substances constituting the cells of animals and plants, comprises carbon. hydrogen nitrogen, sulphur, phosphorus and sometimes other elements.

Pyrophotometer. An optical instrument for the measurement and comparison of very high temperatures.

Photometer. Instrument for comparing intensity of a light source with a known intensity.

Plaster of Paris. A paste found by removing water from gypsum used for making casing for holding broken limbs in position,

Photosphere. Layer of gases beneath the sun's chromosphere.

Radar. A sensitive instrument by which the position of an object in space is located by radio-waves and its speed and direction of movement is also located.

Radiogram. Radio telegram.

Radio-locator. Direction of aircraft, ships, etc., by radio device. Hence *radio-locator*.

Radiometer. An instrument for measuring effect of radiant energy.

Radio telegraph. Apparatus for transmitting message by wireless telegraph.

Relative Humidity. The ratio of the amount of water vapour in the air to the amount of water vapour that the air could hold at the same temperature.

Respiration. The act of furnishing oxygen to the cells of an organism and the giving off of carbon dioxide and water vapour.

Radium. A radio-active chemical element discovered in 1898 by Madam Curie extracted from pitchblende. Important for therapeutic treatment.

Sextant. An instrument used to determine latitude and longitude by making observations on the angle of the sun and stars.

Septic Tank. An underground tank that kill the harmful effects of sewage by means of bacteria.

Stigma. That part of the pistil of a flower which receives the grains of pollen.

Supersonic Speed. Speed faster than the speed of sound, i. e., above 738 miles per hour.

Specific gravity. Relative weight of any kind of matter, expressed by the ratio of given volume to same volume of water (for liquid or solid matter) and of air (for gas).

Spectrometer. Instrument for measuring angular deviation of any ray of light passing through prism.

Spectroscope. Instrument for analysing the spectra of rays emitted by luminous bodies.

Speedometer. Instrument which registers the speed at which a vehicle is travelling.

Stereoscope. Optical instrument for representing to the eyes a single picture of the object in relief though two views of this object have been taken from slightly different angles.

Seismograph. Delicate instrument for recording earth tremors.

Spectrum. The narrow band of colour, shading from red at one end to violet at the other, that emerges when a narrow beam of white light is passed through a prism.

Slag. Metallurgical byproduct obtained in smelting ores after the metals have been extracted.

Stethoscope. An instrument for hearing sound of heart, lungs etc.

Sublimation. The change of a solid body into the state of a gas without passing through the liquid stage when it is heated. Iodine, sal ammoniac and "Dry ice" all sublime heating.

Transpiration. Evaporation of water from the exposed surface of plants. It enables a plant to regulate the temperature and the concentration of mineral salts in its sap.

Thermopile. A delicate electrical instrument for detecting and measuring small quantities of radiant heat.

Tear-gas. A kind of gas (a compound of bromine) that causes tears, used by the police to disperse crowds.

Teleprinter. Instrument which types automatically messages received on telephone wires.

Television. The transmission of scenes or varying images by converting them into electrical waves by means of the photoelectric effect and reproducing them at the receiving end from the electrical waves.

Turbine. A rotary steam engine in which kinetic energy of steam or water is converted into work. It consists usually of a shaft, wheel or motor carrying a number of blades. Against the latter or directed jets of steam or water which cause the shaft to rotate at high speed and thus set into motion the machines to be worked.

Turbo jet. A combination of a turbine and jet engine.

Ultramicroscope. A microscope with strong illumination from the sides whereby the presence of object can be observed though they are too small to be seen in their own form.

Ultra-Violet rays. Invisible rays of light, which physiologically are very powerful, producing sun burns and causing the formation of Vitamin D.

Vacuum-cleaner. Apparatus for removing dust from carpets. etc., by suction.

Valves (wireless). An electric contrivance which converts wireless waves into vibrations audible in the receiver.

Wireless station. A station for wireless transmission.

Zepplin. Large airship first built in Germany.

MEDICAL AND OTHER TERMS

Abscess. A localized collection of pus enclosed anywhere in the body caused by infection with germs.

Allergy. Abnormal sensitivity to any substance which does not harm normal people.

Anaesthetics. Chemical substance like chloroform or ether or a mixture of nitrous oxygen which temporarily deadens local or general consciousness in the body.

Antidote. A remedy for counter-acting a poison.

Antiseptic. A drug which destroys germs. Most commonly used antiseptics are Lysol, Dettol etc.

Auromycin. An antibiotic like penicillin, effective against certain infection such as fever, pneumonia etc.

Anti-Toxin. A substance produced by the blood to counteract the effect of poison or infection.

Appendicitis. Inflammation of the appendix, which is a small body about the size of the little finger projecting from the intenstine in the right lower part of the abdomen. Appendicitis occurs in an attack of abdomen. It may be vomiting and fever. The treatment is removal of appendix by operation.

Aspirin. A white crystalline drug given to relieve any pain.

Asthma. An allergic disease marked by intermittent difficulty in the breathing with cough and a sense of constriction due to contraction of bronchi (air tubes). The attack lasts from a few hours to several days. The attacks often come at night.

Beri-beri. A deficiency disease caused by eating food deficient in Vitamin B. There is numbness of arms and legs and swelling of the feet and hands. There is also anaemia and neuralgic pain.

Bile. Golden, yellow or greenish yellow substance secreted by the liver. Bile aids in the digestion of fats and prevents perfective changes in the intenstine.

Bladder. A membranus sack situated in the front part of pelvic cavity which act as a reservoir of urine.

Blood Bank. The blood is stored as a liquid in refrigerators, but not at freezing point, such reserves are called "Blood Banks".

Blood Pressure. The condition commonly known as blood pressure means high blood pressure. It is a symptom of many different diseases, *e. g.*, kidney disease or internal poisoning during pregnancy.

Blood Transfusion. Transference of blood from one living substance to another. It is usually done by connecting an artery of the donor with a vein of the rscipient.

Boil. It is an infection of the skin. It is caused by—1. Presence of infecting germs on the skin. 2. Lowered resistance of the body. 3. Pressure of friction causing the infecting germ to be rubbed on the skin.

Bronchitis. Inflammation of bronchi, *i e.*, tubes leading from the wind pipe to the lungs. At first there is an ordinary cold, then cough, pain in the chest and favour. At first the cough is hard and dry but later on a great amount of sputum is coughed up.

Cancer. It is a new growth in a malignant form. It is not a disease in the real sense of the word, because no definite cause has yet been found. The tumour goes on increasing in size and it infiltrates the surrounding tissues. It also gives rise to secondary growths much away from the original site. It is curable in the early stage when no secondaries are formed.

Carbohydrates. They are a group of compounds composed of carbon, hydrogen and oxygen. They include sugars, starches and cellulose and form the chief foodstuff of animals. They contribute to health because they build up the body tissues and are a source of energy to the body.

Carbuncle. A very largs boil; mostly associated with diabetes.

Caries. A condition of decay usually applied to the decay of teeth.

Carrier. An individual who harbours germs of certain disease in his body without having any system and thus act as a carrier or distributor of infection.

Cataract. Clouding of the lens of the eye which interferes with clear vision. Usually occurs in old people. Operation can be performed only when the catract is mature, that is when the whole of the lens is clouded. The degenerated lens is removed by operation and glasses are given.

Caesarean operation. An operation in which the abdomen is opened to remove the child in a pregnant woman. The process is named after Julius Caesar, who is said to have been born that way.

Cerebro-spinal fluid. A watery fluid which surrounds the brain and spinal cord. The function of this fluid is to absorb shock.

Chicken Pox. A very infectious disease caused by a virus occurring commonly in children. Small white blisters appear all over the body, especially on the chest. One attacks gives life immunity.

Cholera. An intestinal infectious disease commonly found in India. It occurs by eating infected food. The symptoms are very severe watery diarrhoea and severe vomiting. Loss of fluid gives rise to severe muscular cramps. It is a very serious disease and all efforts should be taken to prevent it. Vaccines have been prepared which when given by injection protect against cholera.

Chloroform. An anaesthetic, being a thin colourless liquid which, when inhaled, produces insensibility.

Colic. It is a disease which is attended with severe pain and flatulent dissension of the abdomin, without diarrhoea.

Colour blindness. Inability to distinguish between different colours while ordinary vision remains normal. It is an inborn condition and the patient cannot ,tell between red and green.

Coma. Complete loss of consciousness ; may be due to many diseases, *e.g.*, alcohol, diabetes, cerebral haemorrhage, brain tumour, etc.

Convulsions. Any kind of fits ; most commonly occur in children. Any type of infectious disease may give rise to fits in infants because their nervous system is not yet developed completely.

Crisis. A sudden turning point of a disease, as in pneumonia—the fever comes down suddenly on the 7th day.

Debility. General weakness which may be the result of many diseases.

Deficiency Diseases. Diseases due to deficiency of vitamins, *e.g.*, rickets.

Delirium. A mental disturbance, may be due to some infection as pneumonia or some poison. The patient is restless and may have hallucinations.

Diabetes. A disease of the pancreas in which there is deficient secretion of the insulin (the secretion of pancreas). Treatment is regulation of diet and injection of Insulin.

Diarrohea. Loose stools due to many causes but mostly due to bad food.

Diptheria. An infectious and dangerous disease common to children. A membrane may grow on the throat which interferes with breathing and may cause death. It can be prevented by giving prophylectic injections.

Disinfectant. A substance that destroys disease germs-

Dropsy. An abnormal collection of fluid anywhere in the body. It may be generalized all over the body or only in the legs. Severe dropsy is due to kidney or heart disease.

Dysentry. A group of disorders in which there is diarrooea due to irritation of the bowels. Two main types are : Amoebic and Baccillary. Infection occurs by eating infected food. In a minor degree there is only diarrhoea but in severe forms there is passing of blood and mucus. This disease is most common in tropical or subtropical countries.

Dyspepsia. Indigestion ; may occur in mild or severe form.

Eczema. A common skin disease, in which the affected portion of the skin is red and is covered with numerous small papules (pimples) which speedily turn into vesicles.

Enteric. Typhoid fever.

Enzymes. Organic catalysts secreted by living organisms, by means of which the various chemical changes necessary for life of the cell are controlled. These are usually found in natural secretions, such as the digestive. secretions—prepain and trypsin etc., of the Alimentary Canal.

Epilepsy. A disease of the nervous system characterized by attack of fits and drilling of saliva from the mouth. It is a hereditary disease and so an epileptic should never get married because the disease will pass on to children.

Fats. They are oily substances under the skin, which contribute to our health because they prevent the skin from drying up. They give energy to the body. They are the principal components of the fatty tissues of the animal bodies.

Fermentation. The spontaneous decomposition which takes place in carbohydrates which produce yeast.

Flatulence. Gas in the stomach and intestines. There is a feeling of discomfort and the patient tries to expel the gas—that leads to swallowing of more air, the patient again tries to expel it out and sucks in more air. Thus a vicious circle is set up and the stomach remains full of gas.

Fracture. Breaking of a bone either completely or incompletely. Fracture at one place is called single fracture, at two places a compound fracture. The patient should be moved as little as possible and kept warm and comfortable.

Hormones are complex organic compounds secreted by glands or certain parts of an organism. They possess certain specific functions, like control or growth, or stimulation or certain organs. Thus insulin is secreted by the pancreas. Other hormones are adrenalin, thyroxin, pituary extract etc.

Glands. There are three types of glands in the body. (1) *Lymph Glands* which occur mainly in the various joints of the body such as arm-pit or groin. Their function is to trap any infection and prevent it from reaching vital organs. (2) *Large Glands* such as liver and pancreas which produce digestive agents and they pour their secretions into the intestines through their ducts. (3)*Endocirine Glands* or ductless glands because they pours their secretions directly into the blood stream and have no ducts. These glands control important functions of the body.

Goitre. Enlargement of the thyroid gland on account of lack of iodine.

Gonorrhea. A venereal disease which causes an inflammatory discharge from the urethra or vagina.

Gout. A painful type of disease of joints usually starts from the big toe. There is an upset in the excretion of certain kinds of food and nitric acid collects in the blood and latter is deposited in some joints.

Haemorrhage. Bleeding—usually due to an injury but it may be internal—due to an ulcer for some deficiency of vitamins or some blood disease.

Hernia. The protrusion of a loop or knuckle of an organ tissue through an abdominal opening. Found commonly in the groin called Tuguinal hernia or in the middle of the abdomin called Umblical hernia.

Hygiene. The science which treats of preservation and promotion of health.

Hysteria. A functional disorder of the nerv ous system. The patient begins to scream or resorts to fits of violent keeping or laughter etc. and can manifest symptoms of any disease but physically he is absolutely normal.

Immunity. The ability to resist infectious diseases. When any germs invade the body, the body produces certain substance as anti toxin to fight the infection or tovin.

When the infection has been neutralised, the body becomes immune to further infection as long as the anti toxin remains active in the blood.

Inoculation. The process of immunizing a person against a disease, by infecting him with weak germs of the disease.

Inflammation. When a body tissue is invaded by germs, the changes that take place in it are konwn as iuflammation. The signs are redness, swelling, pain and rise of temperature.

Influenza. A disease caused by virus (i. e., a germ that cannot be seen under a microscope). It may occur in mild form when it looks just like an ordinary cold. But in severe form symptoms are pains in the back and legs and redness of the eyes, fever and great weakness.

Insulin. The internal secretion of the pancreas used in the treatment of diabetes.

Intestine. The tube beginning at the end of the stomach and ending at the rectum.

Jaundice. Yellowness of the skin, eyes and urine due to presence of bile in the blood. It may occur due to excessive breakdown of blood, i. e., excessive formation of bile, or due to some obstruction to the outflow of bile. Bile accumulates in the blood and gives rise to yellow colouration of eyes and skin.

Kala-zar. A disease used by the bite of the sand fly. There is fever, anaemia enlargement of liver and spleen.

Kidney. There are two organs on each side lying in the spike of the back. The function of kidney is to filter all the blood and excrete the waste matter, which passes through tubes known as ureters, which enters the urinary bladder, and from there it leaves the body through urethra as urine.

Labour. Child birth.

Leprosy. A chronic disease effecting the skin and nerves. There is first pain and tingling in the affected part and later loss of any sensation and various deformities may occur. The disease is curable.

Liver. An organ which lies in the upper right side of the abdomen just under the margin of the ribs. It has manifold functions. 1. All the food, particularly sugar, that is not required by the body is stored here in the form of glycogen and is released whenever required. 2. It also breaks down the positions produced inside the body. 3. It produces bile which is an important digestive agent.

Lungs. Two large organs one on each side which completely fill the chest. They are organs of breathing.

Lymph. The clear saline fluid which carries nutriment to the tissues and waste matter away from them. The lymph is derived chiefly from blood plasma. The lymph filters through capillary wall and serves as exchange medium for the matter mentioned above.

Malaria. A very common disease produced by the bite of mosquitoes which contain the malaria parasites. It is easily curable with quinine. The control of the disease depends upon the control of mosquitoes.

Measles. An infectious disease in which there is fever rash or pink spots and redness of the eyes. It occurs mostly in children and one attack gives life-long immunity. The infection is caused by a virus.

Mumps. An infectious disease usually occuring in children marked by swelling of the salivary glands in front of the ears. It is caused by virus and one attack gives life-long immunity.

Neuralgia. Pain in a nerve. Pain in the tooth is called dental neuralgia and pain in the face, facial neuralgia. The treatment is injection of alchol into the nerve root.

Neurits. Inflammation of a nerve. It may affect any nerve in the body. The cause may be various poisons as arsenic, lead, alcohol or germs, or internal diseases as diabetes, gout or diphtheria. There is pain, wasting of the muscles and defective sensation.

Obsterics. Branch of medicine dealing with pregnancy.

Pancreas. A large gland lying behind the stomach. Its action helps in digestion of proteins. It also produces insulin.

Paralysis. Loss of power of movement in one or more parts of the body. It is due to some damage to the nerve brain, due to iujury.

Parasite. A parasite is an animal or a plant that lives in or on the body of its *host*, more or less permanently. It is mostly incapable of independent existence. It usually does not kill its prey outright, but feeds on the living substance unobstrusively.

Examples of parasite ; Malarial parasite, liver-fluke, tapeworm.

Examples of plants are : Mistlatoe, dodder, tooth-worm etc.

Pasteurization. A process devised by Pasteur of killing certain harmful bacteria in liquids, by first heating and then cooling the liquid. Milk is thus pasteurized.

Pallegra. A disease due to deficiency of Vitamin B. There are skin rashes, weakness, mental depression. It can be cured by giving good diet and injections of Vitamin B.

Penicillin. A recently discovered drug which has completely revolutionized medical treatment. It is non-poisonous to human body, yet kills many types of germs which give rise to many diseases, *e.g.*, Pnuemonia, Gangrenes, Meningitis, Syphilis, Gonorrhea.

Phagecytes. The white blood cells, which have the property of destroying bacteria. They are the body's chief defence against infection.

Piles. Varicose veins round the anus. They are due to pressure on the vein which prevents the free flow of blood. External piles are those developed outside the anus and cause itching, irritation and pain. Internal piles form inside the rectum and at first cause no trouble to the patient but if they grow they cause pain and feeling of fullness of bowel. Mild cases can be treated by relieving constipation but other cases require injection or operation.

Plague. Very infectious disease caused by germs which have on the flea. The flea carry the germs from infected rats to human beings and the bite of the flea injects the germs into the blood stream. It can be prevented by having inoculation against plague.

Plastic Surgery. The surgical repair of seriously damaged tissues. During the two World Wars a number of methods were developed whereby surgeons can restore faces that have been almost entirely destroyed, replace burnt skin, mend damaged nerves, and perform many other surgical marvels.

Pleurisy. Inflammation of pleura which is the lining of the chest and also covering of the lungs. It always occurs due to infection with a germ. Common symptoms are pain in chest, cough and fever.

Pneumonia. Inflammation of lungs mostly due to the germs known as Pnemococcus. The air cells of the lungs become blocked with fluid and this causes dfficulty in breathing. There is fever and pain in the chest. Most cases respond to sulpha drugs and penicillin and after the discovery of these drugs death rate in pneumonia has decreased from 20 per cent to less than one per cent.

Proteins. Organic substances containing carbon, hydrogen, oxygen, and nitrogen. They contribute to health because they constitute an important part of living cells and are essential in animal diet. The most common examples are egg, haemoglobin in blood and ossein in bone.

Pruritis. Itching.

Putrefaction. Decomposition of organic matter through the action of a number of micro-organisms.

Pyorrhoea. An infection of the gums which causes edges of the tooth socket to bleed easily. There is constant discharge of pus which causes foul smell in the breath.

Radio Therapy. Treatment of malignant diseases by means of radio-active substance, like radium or X-ray. Also used in the diseases of the joints and of the blood.

Reflex action. Unconscious action ; not controlled by the mind.

Rheumatism. Rheumatic fever is a definite disease where there is a fever and pain in the joints. Cause is unknown. It is followed by disease of the heart.

Rickets. A deficiency disease in children due to lack of nourishment, *i. e.*, diet poor in Vitamin D. Symptoms are; bow-legs, bad teeth and general weakness. Treatment is giving plenty of fat containing food and Vitamin D. by mouth.

Ringworm. An infectious disease of the skin caused by a fugus. Many types of ringworm are seen.

Scabies. Commonly known as the itch. A very common infectious disease of the skin causes extreme discomfort. The areas affected are groin fronts of the elbows, the wrist and between the fingers. It is caused by contact with a person who has the disease.

Sciatica. Neurits of the sciatic nerve at the back of the thigh. There are many diseases which cause pain of a smaller type, *i e.*, diseases of pelvis, disease of spine, fibrositis, psychological upsets.

Scurvy. A deficiency disease due to deficiency of Vitamin C. which is found in fresh fruits. It is rarely seen these days. Used to be common among sailors going on long journeys.

Small pox. A serious infectious disease. There is fever, pain, vomiting, and eruption of red spots which later become blisters and afterwards are filled with pus. If the patient lives, this eruption leads to disfiguring scars. It is not comonly seen now-a-days due to the use of vaccination.

Serum. Watery part of the blood ; the term also means a liquid obtained from the blood of some animal made immune to a disease which is used to prevent or cure a particular disease.

Septicaemia. When germs invade the blood in large numbers, the condition is known as septicaemia or blood poisoning. It is now curable with penicillin and sulphonamid drugs.

Spinal Cord. Part of the brain enclosed within the backbone. Its function is to transmit impulse to and from the brain.

Spleen. An organ situated in the left upper part of the acdomen. It manufactures blood cells and destroys old ones. It may inerease in size in many diseases as malaria, typhoid and blood diseases.

Sprain. Overstretching of the ligament due to injury to a joint.

Sterility. The inability to have children. May be due to defects either in the man or woman.

Thrombosis. A clot formed within a blood vessel. The causes are sluggish flow of the blood due to weak action of the heart and mild infection in the neighbourhood.

Thyroid gland. A large ductless gland in the neck, the enlargement of which results in goitre.

Tuberculosis. Caused by Tubercle Baccilus. It may effect any part of the body, *e. g.*, lungs, intestines, bones etc. The symptoms are cough, low grade fever, loss of weight, sweating at night and general exhaustion. Treatment is very effective and is likely to improve in the near future.

Typhoid fever or Enteric. An infectious fever caused by eating infected food or drinking infected water. Its course can be divided into three stages. In the first week there is fever, headache and general malais. In the 2nd week the fever reaches its maximum, there may be diarrhoea and a rose coloured rash on the chest and abdomen. In the third week there is improvement if the patient is going to recover other wise complications such as pneumonia set in. It is a very infectious disease and can be prevented by preventive inoculation.

Ureter. The tube connecting the kidneys with the bladder.

Urethra. The tube which carries urine from the bladder to the outside.

Bazooka. An anti-tank gun much used by the Americans in the Korean War.

Bleaching powder. The use of chlorine gas or bleaching powder (chloride of lime) to bring raw materials to the desired whitness.

Braille system. The system of lettering or embossed dots used for enabling the blind to read by touch. It was invented by the French inventor Braille who was himself blinded at the age of 3.

British Thermal Units. The amount of heat require to raise the temperature of one pound of water at one degree Fahrenheit.

Calorie (*in food*). A measurement of energy into and output in body.

A calorie is the amount of heat required to raise one cubic centimeter of water through 1 degree Centigrade.

Carat or karat. A standard of weight for precious stones. It is also used to express the proportionate fineness of gold. Chemically pure gold is 24 carats. If, therefore, it is 15 carats, it means it is 15 carats gold and 9 carats alloy.

Collulose. Complex carbohydrate that makes the cell wall of plants. Cotton, jute etc., are pure oellulose.

Commutator. A device which reverses the direction of current in dynamo.

Cosmic Rays. Radiations of very short wave-length which come to the earth from outer space. They are very penetrating, i. e., able to go through lead even at the bottom of a mine.

Coke. The residue from the carbonization of coal after the volatile matter of the coal has been distilled off.

Constellation. A group of fixed stars—not necessarly connected physically to which have been given a pictorial configuration and a name (generally of Greek mythological origin) which persists in common use although of no entire significance.

Control room. A room used by the engineers of an electric-power supply system for supervising operation of the system.

Cosmogony. The science of the origin of stars, planets and satellites. It deals with the genesis of the galaxy and the solar system.

Cross-fertilization. (*Biol*). The fertilization of the female ganetes of one individual by the male ganetes of another individual.

Crystal. A body, generally solid, whose atoms are arranged in a definite pattern, the crystal faces being an outward expresslon of the arrangement of the atoms.

Denudation. The laying bare (Latin *nudus*, naked) of the rocks by chemical and mechanical disintegration and the transportation of the resulting rock debris by wind or running water.

Fermentation. Chemical change produced by yeast or bacteria.

Fertilizer. Plant and other vegetation food to improve their quality and yield. They consist of either manure or synthetic chemicals. In general three major elements—nitrogen, phosphorus and potassium are restored to the soil. Of these the most important are nitrates and nitrogenous compounds and phosphates.

Filament. The part of the stamen which supports the anther. It also means the fine wire through which electric current passes in the bulb or tube.

Fission. The splitting of the nucleus of an atom into parts. The term also means the process of reproduction in one celled living things by simple cell divisions.

Fluorescene. The process in which substances give off light upon absorbing radiant heat.

Fuse. An alloy of low melting point placed in an electric circuit to melt if an excessive current is placed on the line.

Galvanometer. An electrical instrument for measuring small electric currents.

Glider. A heavier-than-air craft, propelled without engine. In the modern designed machine soaring flights are made even without wind, and flights have been made even without landing. Gliders were extensively used by the Germans during the Second Word War in their military operation on Crete.

Graft. A plant consisting of a rooted part (the stock) into which a budding spring of another tree has been inserted so as to produce new varieties of the plant.

Gregorian Calender. The name commonly given to the civil calender now used in Western Europe, which is the Judian calendar as reformed by decree of Pope Gregory the Great in 1582.

Gyroscope. It is a scientific apparatus, illustrating the principle of a spinning top the axis of which tends to retain its direction. It is applied to keep self propelled torpedoes on their course, and to steady ships and help in steering.

Hard Water. Water which contains dissolved compounds of calcium or magnesium or both which do not form a lather with soap.

Haemoglobin. The colouring matter in the red blood corpuscles.

Heavy Water. A chemical compound prepared by the combination of Oxygen with an isotope of Hydrogen whose atomic weight is 2. It is used as a moderator in atomic energy plants.

Heredity. The transmission of trait from parents to offspring.

Horse Power. The engineering unit power equal to a rate of working 33,005 foot-pounds per minute, or 23-56 C.H.U. per minute, or 41-42 B. Th. U. per minute.

Humidity. The absolute humidity of the air, that is, the quantity of water vapour present per unit volume.

Hybrid. The offspring produced by crossing two parents of two different species. They are usually sterile as is the mule, a hybrid between a stallion and the donkey.

Hydrolysis. This term is applied to those chemical reactions in which decomposition is brought about by the action of water.

Hygrometer. Instrument for finding the dew point and also the amount of water vapour in the air.

Induction. Magnetizing a magnetic substance by bringing it near another magnet. The term also means producing an electric current in a coil of wire moved in a magnetic field, so that magnetic lines of force are cut by the coil.

Inertia. The tendency of bodies in motion to remain in motion and bodies at rest to remain at rest.

Inflorescene. The term means the arrangement of flowers of a branch or stem.

Insulator. An appliance used to insulate a conductor from earth, or from another conductor. and frequently also serving to support the conductor.

Internal Combustion Engine. It is an engine in which heat energy is added to the air within the working cylinder and converted into mechanical work through the medium of a piston or by a turbine motor. Petrol is used in the motor engine, heavy oil in the diesel engine and coal in the gas engine.

Invertebrates. Animal without back-bones.

Isotope. Atom of an element having the same chemical properties as the element, but different atomic weights.

Jet. A fluid stream issuing from an orifice or a small nozzel, as the jet of a carburettor.

Kenel. The inner soft part of a nut or fruit-stone.

Kilowatt. Unit of electrical energy equal to 1000 watts of nearly 1 horse-power.

Kilowatt-Hour. It is the amount of energy used in one hour at the rate of I kilowat.

Lactometer. Instrument for measuring the amount of butter fat in milk.

Legumes are plants like beans and peas having nitrogen fixing bacteria in nodules on their roots.

Light Year. The distance light traveles in one year. It has been computed at 5-87 million miles.

Lithography. Originally the art of printing from stone, but now applied to printing process depending on the mutual repulsion of water and greasy ink.

Magnetism. A general term used to denote either a magnetic field or the whole science associated with the behaviour of such fields.

Metamorphosis. Pronounced change of form of structure taking place within a comparatively short time.

Microscope. An instrument used for obtaining magnified image of small objects.

Ohm's law. The law governing the flow of steady current in an electric circuit. It states that the strength of an electric current is equal to the electromotive force divided by the resistance of the conductor.

Optics. The study of light.

Osmosis- The gradual interchange of two fluids which are separated by an animal membrane.

Ovule. The egg-like body in the ovary which develops into a seed when fertilized.

Ovary. In animals and humans the organ which produces the unfertilized eggs or ovum. In plants the organ which produces and contains the unfertilized seed.

Orbit. The path of a heavenly body, moving about another under gravitational attraction.

Paravane. It is a torpedo-shaped device, with fins, which is towed from the bow of a ship to remove mines from the ship's path by deflecting them among a wire and severing their moorings.

Photo chemistry. The study of the chemical effects of radiation, chiefly visible and ultra-violet, and of the direct production of radiation by chemical change.

Pistil. The female organ of a flower.

Polarisation. A phenomenon occurring in primary cells, by virtue of which a reduction takes place in the e.m.f. after current has been flowing for some time, owing to the collection of certain products of electrolysis on the electrodes.

Protozoa. The lowest division of the animal kingdom which reproduces by fission or cell-division.

Precipitation. The formation of an insoluble solid by a reaction which takes place in a solution.

Pollination. The process in which pollen is transferred from the anther to the pistil of flower.

Radiation. Energy emitted in the form of electro-magnetic waves.

Radio-activity. The action of giving off alpha, beta or gamma rays when the nucleus of certain atoms break down.

Recessive trait. Trait which does not appear in the offspring unless it is inherited from both parents.

Rocket. A device carrying its own oxygen and fuel supply used to explore the upper atmosphere. It is propelled by the reaction of burning fuel against air.

Refraction. When ray of light passes from one medium to another it generally changes its direction and is therefore said to suffer refraction.

Refrigeration. The process of obtaining a temperature lower than the atmosphere by mechanical methods. The method is based on the principle that the change from the liquid to the gaseous state is to be brought about by the absorption of heat. In this system carbon dioxide, ammonia, methyl chloride and freon are mostly used.

Specific Gravity. The ratio of the mass of a given volume of water a temperature of 40°C.

Sunstroke. A nervous disease produced by exposure to high atmospheric temperature.

Telegraphy. The electrical communication system whereby messages are transmitted in coded signals by trained operators.

Telephony. The transmission of speech-currents over wires, by means of which two persons effectively converse at a distance.

Telescope. An optical instrument for making distant objects appear nearer.

Thermostat. An automatic device for regulating temperature.

Transformer is a device made up of two coils wound of an iron core and used to raise or lower the voltage on an alternating current.

Transmitter is the point of a telephone into which one speaks and which changes sound waves into electrical impulses. The term is also used for the key of the telegraph set. Also for the device that sends out radio waves for reception.

Velocity. Rate of change of position or rate of displacement, expressed in feet (or centimeters) per second.

Watt is the unit for measuring electrical power.

War neurosis. A synonym for *Shell-shock*. The term was originally used (war of 1914-1918) for all types of nervous conditions resulting from war experiences especially those caused by a bursting shell.

X-ray or Roentgen rays. Invisible radiation of short wave length discovered in 1895 by Roentgen. They can penetrate bodies opaque to ordinary light, so this property is used in radiography when the bones of the human body are clearly revealed in an X-ray photograph and hence fractures can be easily located, and any other matter inside the body through which they cannot pass.

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VERY IMPORTANT QUESTIONS WITH ANSWERS

1. What do you know about the following :—

(*i*) **Radar** (*ii*) **Rocket bomb** (*iii*) **Telstar** (*iv*) **Hot line** (*v*) **24th Parallel** (*vi*) **Television.**

Ans. (*i*) **Radar** *:* Radio, Angle, Direction and Range. This is a sensitive instrument by which the position of an object in space is located by radio waves, as also its speed and direction of movement. The principle on which it is worked is that all solid and liquid bodies reflect radio waves which are uninfluenced by darkness or fog or cloud. To detect any reflecting object in space it is necessary first to flood that object with radio waves. Ground reflectors are used to pick up the reflected beam and it is then possible to determine the direction of arrival of the waves and thus the direction of the radio located object with respect to the ground station.

The distance along that direction may also be determined by timing the journey of the radio waves to the reflecting object and back. The accurate and speedy measurement of the time intervals of these waves going and coming back is the basic feature of the radio measurement of distance.

(*ii*) **Rocket bomb** *:* It is aluminium tube 50 ft. long' tapering to a warhead point, carrying a ton of explosives. Below this are the radio receiver, alcohol and oxygen tanks. When fired it rises to a height of 70 miles and attains a speed of 3000 miles per hour and is aimed at the object (whose location has been accurately ascertained) to be destroyed by gyroscopic control. This type of bomb, called the V_2 bomb by the Germans was first used by them during **1944-45** and London was its **special** target.

(*iii*) **Telstar** : It is an instrument invented by U.S.A. to transmit wireless or television broadcasts more distinctly across continents via space. It could pick up, amplify and retransmit earthly signals. It has revolutionized the modern methods of communication.

(*iv*) **Hot Line :** A tele-communication link established since 1963 between Kremlin (Moscow, USSR) and White House (Washington U.S.A.) to avoid War by misunderstanding. Rawalpindi and New Delhi also have been linked by Hot Line.

(*v*) **24th Parallel :** The line demarcating the boundary between West Pakistan and Gujarat (Rann of Kutch).

(*vi*) **Television** : Images of moving objects are transmitted by radio. The objects or persons to be televised are illuminated strongly. The part of light reflected by the objects is fed into a camera which converts them into electrical impulses. The electrical impulses or electro-magnetic waves are again converted into light giving a visual image.

Q. 2. Explain in non-technical language :—

(a) **Alpha Rays** (b) **Cosmic Rays** (c) **Electrone microscope** (d) **Ultra violet rays** (e) **Spectrum** (f) **Chromosomes.**

Ans. (a) **Alpha Rays** are positively charged particles and are the positive nuclei of helium atoms. Their velocity is 12,000 miles per hour.

(b) **Cosmic rays.** Radiation that enters the earth's atmosphere from outside and eventually reaches the earth's surface. Much of it is very penetrating i. e. it is able to go through lead even at the bottom of a mine.

(c) **An electron microscope** is a design of microscope in which the specimen is illuminted by electrons which are focussed by means of specially shaped magnetic fields. The electrone serve the same purpose as light in the ordinary optical microscope, but as they have a much smaller wave length than light, they are therefore used to observe specimen (like viruses) much smaller than could be observed by light.

(*d*) **Ultra Violet Rays.** Light rays invisible to the naked eye. They are that part of the solar spectrum which is beyond its violet end. Physiologically they are extremely powerful as they produce the valuable vitamin D in the human body and therefore help in the removal of rickets and other deficiency diseases. They are also extremely germicidal and are the powerful part of the sun rays that produce sunburn. Artificially they can be produced by mercury vapour and arc lamps for theraputic purposes.

(*e*) **Spectrum.** Name given to the coloured band into which the white rays of the sun break when they are passed through a prism.

The order in which the coloured bands appear are violet, indigo, blue, green, yellow, orange and red (Vibgyor)

(*f*) **Chromosomes.** Thread like bodies formed from cromatin network of a cell nucleous during the process of normal cell division (the cell having been formed in the womb of the female, after the female ovum has been fertilized by the male gamete or supermatozoon). The chromosomes are supposed to be the carrier of hereditary factors and changes in them are passed on from one generation to the next,

Q. 3. (*a*) **What is an Atomic Reactor ?**

(*b*) **What is an artificial radio activity ?**

(*c*) **What is the principle of an atom bomb ?**

Ans. (*a*) **An Atomic Reactor.** It serves as a huge furnace in which nuclear fission takes place and thereby produces a huge amount of energy. This energy, now a day's is used for constructive purposes. An atomic reactor is employed for the manufacture of radio isotops and for carrying on research on the peaceful uses of atomic energy.

(*b*) **Artificial Radio-activity.** When a light element is bombarded by particles, protons are thrown out by the nucleus, which fact leaves it in unstable disturbed state. When it settles down to a stable condition it sends out radio active rays. Hence artificial radio activity takes place when a stable element is rendered radio active by artificial disintegration.

(c) **An Atom Bomb.** It is based on the artificial disintegration of uranium. When bombarded by neutrons, the uranium atoms are split up and enormous energy is released in the form of radio-active rays, heat rays etc.

The reaction proceeds very rapidly and an extremely violent explosion results. Naturally occuring uranium consists principally of u 238 only a small fraction (one part in 140) being u 235 now u 238 absorbs, **Captures,** neutrons without producing fission, and thus acts as an impurity which will stop the reaction. It is necessary to carry out the difficult and expensive process of separating the u 235 from u 238 and to use only the former.

Q. 4. What did the following scientists contribute to the science :—

(*a*) **Archimedes** (*b*) **Roger Bacon**

(*c*) **Frederick G. Banting** (*d*) **Emil von Behring**

(*e*) **Alexander Graham Bell** (*f*) **Marie skoldowska curie** (*g*) **Charles Darwin**

(*h*) **Lee de Forest** (*i*) **Thomas A. Edison**

(*j*) **Michael Farady** (*k*) **Benjamin Franklin**

(*l*) **Gallileo Galieli** (*m*) **Dr. Argnar Granit of Sweden, Dr. Haldan keefer Hartline and Dr. George wold**

Ans. (*a*) Archimedes discovered relationship between buoyancy and displacement of fluids known as Archimedes' principle. He also discovered the laws of the lever.

(*b*) Roger Bacon's contribution to the advancement of science lay in the fact that he insisted upon proving every scientific statement by experiment and not guess work and not merely relying upon authority, however; ancient or universally accepted. He thus laid the foundation of the modern system of scientific research.

(*c*) Banting's investigations into internal secretions of the pancreas, resulted in discovery of the insulin cure for diabetes.

(*d*) E. Von Behring developed an antitoxin to prevent a cure for diptheria.

(*e*) Alexander Graham Bell invented the telephone.

(*f*) Madame Curie made research in radio-activity and discovered the cancer curing element radium and the element polonium.

(*g*) Charles Darwin is the founder of the modern theory of evolution.

(*h*) Lee de Forest invented audion bulb which made possible radio transmission and reception.

(*i*) More than a thousand inventions or improvements of older ones are to Edison's credit ; chief of which are : the carbon transmitter, the phonograph, the incandescent electric lamp; a new type of storage battery, the moving picture camera, multiplex telegraphy etc.

(*j*) Faraday discovered electromagnetic induction which resulted in the development of the first electric generator. He was the first to make a dynamo.

(*k*) Benjamin Franklin's name is associated with the discovery of the identity of electricity and lightning.

(*l*) Galleo discovery the laws of freely falling bodies. He invented also the first practical telescope, the hydrostatic balance, the pendulum to regulate clocks, and improved the microscope etc.

(*m*) All the three share 1967 Nobel Prize for medicine. They got the award for their discoveries concerning the chemical and physiological visual process in the eye.

The discoveries made by them have supplied answer to questions of fundamental importance for the understanding of visual perception.

Q. 5. What do you know about' New Satellite link set up recently (Oct. 1967) in India ?

Ans. New satellite link set up :—

A new link has been established in the development of a global satellite communications system with the initiation of operations in Ahmedabad, a centre for research and training on the use of satellite communications.

The centre is disigned to equip India for its role as a vital relay between Europe and the Far East in the worldwide satellite communications, system and as a source of information on tropical conditions.

It will serve as a satellite tracking station and as a training centre for Indian and foreign scientists and engineers in the technology of space communications.

In June 1965 the project design commenced in Ahmedabad and the installation of the technical and ancillary systems on April 1 last. The station went into operation on Aug. 1. Experiments were successfully conducted on Aug. 30 handling speech and television signals in a "loop configuration" via A. T. S.–N satellite. in Sept 5 and 7 the first T. V. picture was successfully transmitted to Kashma station of Japan and Toowoomba station of Australia via A. T. S–II satellite.

The United Nations development programme is contributing s638,500 towards the centre, while the Government of India is making a counterpart contribution equavalent to 192.875 dollars to cover the cost of buildings, local services and personell. The International Telecommunication Union (ITU) is supervising the operation of the installations of the centre.

Q. 6. What do you know about the Soviet Russia's recent Space achievement ?

Ans. The Soviet Russia very recently (Oct. 1967) amazed the world by soft landing its space-ship Venus IV on the Venus. The telemetric signals from the instruments which floated down to Venus's surface have sent back data noted as 'truly remarkable'.

Like the theories about the nature of the surface and the atmosphere of the moon several guesses had been made about the clouds which prevented astronomers from observing Venus. One school of thought held that these clouds were vaporous amonia; and another, that they were methane. Only a few suggested that the carbon dioxide content was high. No body had ventured the opinion that the Venusian atmosphere was composed almost exclusively of carbon dioxide. This gas, it was felt, was abundant in the Martian atmosphere and accounted for the "redness" of that planet.

What had been measured with reasonable accuracy before the advent of the space laboratory was the temperature of the earth's nearest planetary neighbour. The Soviet achievement has now confirmed that Venus is too hot for comfort. But one encouraging sign is the presence, even though in minute quantities, of both oxygen and water vapour in that planet's atmosphere. It is the absence of these that makes life on the moon problematic. There has been a great deal of learned speculated by biologists and biochemists about the possibility of metabolisms which csn thrive in an atmosphere different from that of the earth. But life without an atmosphere of any kind is considered an impossibility. However, comment on this aspect of space exploration must wait for the moment. The Soviets have promised to reveal all that they have learnt from Venus IV after the data have been throughly studied by them.

Q. 7. Write what you know about :—

(*i*) Aid India Club (*ii*) European Common Market (*iii*) M. L. F. (*iv*) G. A. T. T. (*v*) Tashkent Declaration.

Ans. (*i*) **Aid India Club.** Formed in 1958 at the instance of the World Bank to assist India in financing her Plans.

U. S. A.. Canada, U .K. West Germany, Japan, Austria, Netherlands, France, Italy, Belgium have also joined the Club. A total sum of over 2500 crores was provided to India during the Third Plan.

India has received about 254 million dollars of non-project aid so far during 1967-68.

The entire non-project assistance of 900 milion dollars pledged by the Aid India Consortium for 1966-67 has been converted into bilateral agreements.

(*ii*) **European Common Market or Economic Community.**

Members : Belgium, France, West Germany, Italy, Luximburg and Netherlands. Established 1 Jan. 1957, Aim to establish : a common market to devise common policies for agriculture to set up institution for commhn economic developement and to reduce tarriffs among member countries. Complete abolition of tariffs to be achieved between 12 to 15 years.

Britain is anxious to join the E. C. M. Gen. D. Gaulle on Nov. 4, 1967 made it clear that she or any other country interested in joining the Common Market could do so as associate members only. It may be noted here that Britain has repeatedly rejected the idea of association. Britain is insisting on full membership.

(*viii*) **M. L. F.** M.L.F. stands for multi-lateral nuclear force. It was a proposal made by the U.S.A. (1963) for joint nuclear defence by members of the NATO. It was a devise to give the European nations an equal voice in the control and use of nuclear weapons.

The U.S.A. proposed a fleet of 25 ships armed with nuclear-tripped Polaris missiles and manned by an international crew. But the U.S.A. wanted that decision to use the missiles would vest with the American President. Britain is not willing to join it ; France has rejected it and Russia has strongly protested against formation of M.L.F. All of them fear that the ultimate control of the force will be in the hands of the U.S.

Britain has given an alternative proposal in the shape of A.N.F. (Atlantic Nuclear Force) which would be manned by mixed crews. The force will be equipped with contributions from all members of the alliance. Britain will contribute some U. bombers and Polaris missiles.

(*ix*) **G.A.T.T.** (General Aggrement on Tariffs and Trade). It is an international trade agreement on tariffs. Reductions in tariffs have resulted from this among 23 countries. The emphasis shifted from tariff bargaining to the prevention of restrictive and discriminatory control over imports after 1955. The countries which adhere to G.A.T.T. account for four-fifths of international trade.

(*x*) **Tashkant Declaration :** (Jan. 1966). At the Summit talks held between late Lal Bahadur Shastri and President Mohd. Ayub Khan through the good offices of the Russian

Prime Minister Alexie Kosygin both India and Pakistan agreed to solve all their differences through peaceful means, to normalise their relations, not to interfere in their internal matters. They also agreed to withdraw their forces to the 5th August, 1965 position.

Q. 8. Has devaluation been a success ?

Ans. No. Devaluation of the Indian rupee has miserably failed. It was thought that the devaluation would boost up our exports. But the fact is that during the post devaluation period (June 1966 May 67) our total exports were of the order of 1525. 6 million dollars as against 1711. 0 million dollars during the corresponding period of the previous year. Thus, in twelve months of devaluation exports, in stead of going up, actually went down by 185.4 million dollars or 11% This is in sharp contrast to an increase of 23 million dollars or 3,5% during January-May 1966 as compared to 1965. As export is considered the main test of the success or other wise of a devaluation, this performance is a sad commentary on the wisdom of the decision.

Regarding foreign exchange, the total reserves, which at the end of June 1966 were Rs. 581.17 crores, dropped to Rs. 475.80 crores (provisional figure) by the end of May 1967 *i.e.* a depletion of Rs. 105. 37 crores in eleven months,

The argument given in favour of imports substitution was that the cost of imports in terms of rupees will automatically go up and so domestic production of the imported items will be encouraged. But just the contrary happened. The imports financed by non-project aid had in some way actually worsened the recession, since the producers of some goods now faced stiff competitions from imports.

As for foreign aid, during June 1966-March 1967 the total amount of foreign loans received was worth only Rs 719. 89 crores. This does not compare favourably with the high expectations.

As for smuggling, it is more rampant today than before devaluation. In January 1967 the customs authorities seized commodities (including gold) worth Rs. 61.02 lakhs as against Rs. 43. 32 lakhs in the corresponding month last year.

It is estimated that during the last year following devaluation, over Rs 100 crores worth of luxury goods, including diamonds, were smuggled into India robbing the country of the same amount of best quality foreign exchange.

Handling of the price front is the most important condition for the success of a devaluation, and it is on this front that the greatest failure has been witnessed. In exact contrast to the promise made, prices have risen steeply and they have risen more steeply in case of essential goods. In the twelve months following devaluation while the general index for all Commodities rose by 14.1% that for food articles went up by 22.2%.

Why devaluation failed :—

Devaluation failed because the decision was taken in utter haste without any pre-thought plan of follow up actions. Secondly, because it was taken at a wrong time when the country was passing through an unprecedented lean agricultural year.

The success or otherwise of a devaluation depends upon the capacity of the country to export which depends upon the elasticity of the demand for and the supply of its exportable commodities. In case of india demand for our exportable commodities— tea, jute manufactures, coffee, spices etc. were inelastic. Then as the country was passing through an extremely lean agricultural year, there was no chance of increasing or even maintaining the previous level of the export of agricultural and agrobased commodities which together comprise 75% of our exports.

A third reason of failure was the reduction in Government demand for a number of industries which over the years had been geared to the public sector. It is estimated that 37% of India's engineering and 45% of its cement orders came from the public sector. A drastic reduction in government orders in the first year of the 4th Plan caused recession in these industries which in turn affected other industries.

It will not be out of place to repeat the warning given shortly after devaluation by H. V. R. Iyengar, ex-governor of the Reserve Bank : "Any further devaluation will not only be ruinous to the country but will erase it like many other countries of the world."

Q. 9. Write short Notes on :—

(*i*) **Industrial Development Bank of India. (I.D.B.I.)**

(*ii*) **Agricultural Refinance Corporation.**

(*iii*) **Consolidated Fund of India.**

(*iv*) **Asian Development Bank.**

(*v*) **Indo-U. S. Foundation.**

Ans. The Industrial Development Bank of India : The I.D.B.I. was set up in July 1964, as a subsidiary of the Reserve Bank, to function as an apex development bank for the specilised financial institutions in India.

Its aim is to give long-term loans to industry on a coordinated basis. Now an industrialist can submit his proposal to the joint group instead of running from one institution to the other. I.D.B.I. also takes initiative in getting these financial institutions together.

The sphere of activities of the bank also include marketing and investment research. It also conducts techno-economic survey, and provide technical and administrative assistance to industries. It has large number of shares in the Industrial Finance Corporation.

(*ii*) **Agricultural Refinance Corporation :—(1 July, 1963).** The aim to set up the 'Corporation' was to give financial assistance to Scheduled Banks, State Cooperative Banks, Central Land Mortgage Banks and Cooperative Societies approved by the Reserve Bank of India for the purpose.

Financial aid is given for agricultural developments only and to those projects (concerned only with agricultural developments) which cannot be financed by the existing financial institutions.

(*iii*) **Consolidated Fund of India :** All the monies received and the expenditures made by the Government of India are kept seperately under two heads :—

(*i*) The Consolidated Fund of India.

(*ii*) The Public Account.

A. To the Consolidated Fund of India are credited:–

(*i*) All revenues received.

(*ii*) Loans raised or repaid.

No money can be withdrawn from this Fund except under the authority of the Parliament.

B. Following expenses are debited to the Fund :—

(*i*) Salary and allowances of the President and other expenses relating to his office.

(*ii*) Salary and allowances and pensions of the Judges of the Supreme Court and also the Comptroller and Auditor General of India.

(*iii*) Salary and allowances of the Chairman and Vice-Chairman of the Rajya Sabha and Speaker and the Deputy Speaker of the Lok Sabha.

(*iv*) Repayment of Loans.

(*v*) Any decretal liabilities of the Government.

(*vi*) Any other expenses sanctioned by the Parliament.

(*iv*) **Asian Development Bank.** Inaugurated on November 24, 1966 the aims and objects of this institution is to give financial aid to the under-developed countries. It has a capital of about 1100 million dollars out of which 60% has been contributed by the regional members and the rest by the U.S.A., the U. K. and Italy. It has 31 regional and non regional members.

Mr. Takashe watanbe (Japan) is its first President, Mr. E. Z. Romuolders (Philippines) is the first Chairman of the board of Directors. Mr. P. V. R. Rao of India is one of the Directors. The Bank started functioning in Manila from 19th Dec., 1966.

(*v*) **Indo-U.S. Foundation.** The idea of establishing, such an institution to help India in all fields of learning, to advance science and to encourage research and to develop new techniques in farm and factory, was initiated by nobody but President Johnson himself when Mrs. Indira Gandhi visited America in 1966.

There was a proposal to established a Board of Directors having distinguished citizens and Scientists from the U.S.A. and India as its members. But unfortunately this proposal did not find favour with the Indian politicians who opposed it tooth and nail fearing that such a step would encourage U.S.A. influence on the Indian people. Owing to considerable opposition the plan was put aside for some time. But it was revived again when a high-level American scientists delegation came to New Delhi to inaugurate. The National Council for Science Education. The finances of this organization will be met out of P.L.–480 funds lying unutilized in India.

Q. 10. Write short notes on :—

(*i*) **Administrative Reforms Commission.**

(*ii*) **The Press Council of India.**

(*iii*) **National Development Council.**

(*iv*) **P. L.--480.**

(*v*) **India Productivity year.**

Ans. Administrative Reforms Commission.

A six member Commission was appointed by the Government of India under the Chairmanship of Mr. Morarji Desai (Now Mr. K. Hanumanthaiya is its Chairman) to probe into Public Administration and make recommendations for reform and reorganization. The Commission examined the following :—

(*i*) The machinery of the Government of India and its procedure of work.

(*ti*) The machinery for planning at all levels.

(*iii*) Centre State relationship.

(*iv*) Economic, Financial, Personal and District Administration.

(*v*) Problems of redressing the grivances of the people.

The Commission submited its interim report on 20th October, 1966 which was subsequently presented to the Lok Sabha by the Union Home Minister on November 1, 1966.

The Commission recommended the appointment of Lok Pal and Lok Ayukts, independent of the executive the judiciary and the legislature. Lok Pals to deal with the complaints against Ministers and other high officials, the Lok Ayukts to look into complaints against sinior officials. Each State should have its own Lok Pal.

(*ii*) The Press Council of India.

The aim and objective of establishing 'The Press Council of India' is to preserve the freedom of India's press and maintenance of and improvement in journalistic standards. It came into being in 1966 with Mr. J. R. Mudholkar as its first Chairman. It has 25 members—2 from the Lok Sabha nominated by the Speaker, 2 from the Rajya Sabha nominated by its Chairman, three with special knowledge or experience in the educational fields—science, law, literature and culture and 19 eminent journalists.

(*iii*) National Development Council.

The National Development Council has been established to review the working of the National Plans and to consider important questions of social and economic policy affecting National Development.

The Council has also to recommend measures for the achievement of aims, objectives and targets set out in the National Plan including measures to secure the active participation and co-operation of the people and also to improve the efficiency of the administrative services.

(*iv*) **P. L. 480** (Public law enacted by the 83rd congress). The Agriclutural Trade Development and Assistance Act commonly known as P.L. 480 was passed by the U.S. congress in 1954. Its main provisions are :—

- (*i*) Food donations are made to voluntary organizations assisting the needy.
- (*ii*) Emergency donations of agricultural surplus are made in cases of famine.
- (*iii*) Money from the sale of American Agricultural commodities for grants and loans.

(*v*) **INDIA PRODUCTIVITY YEAR** —

Launched on December, 31, 1965 or early 1966, the aims and objectives of the I. P. Y. are to award prizes and nation recognition to Industrial Units and individuals achieving success in import substitution, imports avoidance and higher productivity.

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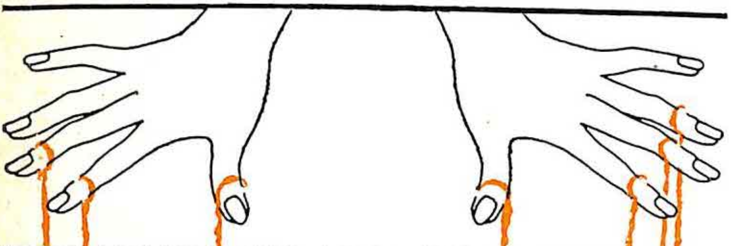

PUPPETS WITHOUT STRINGS

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22 millions to maintain his hold and prestige over the country. He has abolished the ranks in the Army and the soldiers are being taught to consider Mao's thoughts to be their chief weapon. Every Chinese is being found to learn Mao's thoughts and to follow them blindly. This created resentment in certain Army circles as well as among the workers and the Trade Union bosses all over the country.

The followers of Mao-Tse tung are known as 'Red Guards' and the methods by which they are forcing Mao's thoughts on the people they have named as 'Cultural Revolution.'

According to Mao, peace can't be established without wars and hence 'War' is a 'Must' if the world is to enjoy peace for times to come.

Sometimes the 'Red Guards' have behaved in a very inhuman manner with those who disagree. They are subjected to unmentionable sufferings and atrocities.

Gheraos in India. 'Gherao' is a new technique adopted by certain sections of the trade union movement. Regardless of the correct connotation of the term, in actual practice, it means wrongful confinement of individuals in pursuit of labour demands. A very ugly situation has developed in certain parts of the country, specially in West Bengal, where the workers have been instigated by the trade union leaders to harass the management staff, surround them in the factory, office or residence, prevent them from going out or coming in and deprive them of the normal amenities of life. These practices have been resorted to, for the purpose of bringing pressure on employers to accept all manner of demands made by the workers.

News have been received where the officers and supervisors have been confined in small rooms or have been made to stand in sun-shine in scorching heat for hours together,

A controversy had been raging whether such 'gheraos' were legitimate and constitutional or should these be declared illegal and banned.

Mr. D. N. Sinha, Chief Justice of the Calcutta High Court, delivering judgements in the Jay Engineering Gherao case, held the gherao unlawful and unconstitutional. (29.9.67)

Defining gherao his lordship said : "A gherao is the physical blockade of a target, either by encirclement or forcible occupation. The target may be a place or a person or persons, usually the managerial or supervisory staff of an industrial establishment. The blockade may be complete or partial. If it is accompanied by wrongful restraint or confinement, or accompanied by assault, criminal trespass, mischief to person or property, unlawful assembly and various other criminal offences, used as a coercive measure to controllers of industry to force them to submit to the demands of the blockaders, su ch a gherao is unconstitutional and violative of the laws of the land."

Red Guards. This is the name assumed by Chinese school and college students numbering about 22 millions approximately. This is so called Mao's personal army to propagate his thoughts, theories and way of life and to enforce them upon the people regardless of their age, caste, creed or sex. They are pledged to mercilessly destroy every hot bed of revisionists'. These students wear military type khakhi uniforms with red arm bands.

This 'Great proletarian cultural Revolution' what they call it has divided the Army into two sections one under the leadership of Liu Shac-chi., the erstwhile President of China and the other under Piao,Lin, the likely successor of chairman **Mao.**

Kuomintang. A nationalist party founded by Sun Yat Sen in China in 1891 to oust Marshal Chiang-Kai-Sheik which purpose it did carry out by leading a revolution against him (1912.)

Under the leadership of Chiang Kai-Shek it remained engaged in war with Japan from 1937 to 1945 when in 1948 the Communist Party of China, the present ruling party, under the chairmanship of Mao Tse tung captured China and drove out the Kuomintangs from the main land to formosa.

Viet Cong. In South Vietnam, the Communist party supported by the North Vietnam Government are called the Viet congs or the National Liberation Front. Viet cong guerrillas are giving very tough fight to the U. S. forces. The

Viet Congs are getting armaments and other materials from Laos and Cambodia, The Viet congs are very highly trained in war tactics and jungle warfare.

NAMES IN THE NEWS

Expo'67. 'Expo' is an abbreviation for EXPOSITION meaning there by a public-show or exhibition.

Canada, to mark the centenary of its confederation, organized this exhibition-greatest ever held in the world. Montreal, was the venue of this exhibition. It was inaugurated on 28 April and lasted till October 27, 1967. India also took part in it. President Zakir Husain inaugurated the 'India week' organized by the India Pavillion on June 28, 1967.

The theme of this exhibition was 'Man and his world'. His achievements in science and art over the last eight years.

Expo'67 was trying to demonstrate to the world that factors that unite the mankind are more important than what separate them.

About 60 nations took part in it. The Indian Pavillion was rated among the most popular, Over 15 lakh people visited the Indian pavillion during this period. The Indian sarees, raw silk sarees, scarves and handicrafts were among the popular items which fetched more than 1.5 million dollars

Ostankimo. It is the name of a television tower being built in Moscow which when complete will be 1722 ft high. It will be world's latest building structure.

Super Bazars or Apana Bazars. The Government have opened co-operative department stores in some of the big towns in the country to check rising prices. This is the first step towards socialization of trade through expansion and strengthening of a cooperative-cum-state distributive net work. But honestly speaking the purpose for which these stores have been opened does not seem to have attained much success. It has not gone too far either to influence the rising market trends.

Hot–Line' (Washington–Moscow). It is a direct communication link between Washington and Moscow. It is meant for operation in an emergency and also to avoid any misunderstanding which may otherwise result in war between the two countries. It was in augurated on August 31, 1963.

Hot–Line (Moscow–Paris). Is also a direct teleprinter link between the Kremlin in Moscow and the Elysee Palace in Paris. An agreement to establish the link was signed between the two countries on November 9, 1966.

General De Gaulle visited the Soviet Union in June 1966 and this step was taken in order to strengthen mutual contacts at the highest level.

Magasaysay Award. It consists of a cash prize of Rs.75000/–, a gold medal and a scroll and is awarded annually to Asians who have achieved distinction in various fields of human endeavour.

This year Mr. Satyajeet Ray, the well known Indian Film Producer was given the award for Journalism and literature.

This award is instituted to perpetuate the memory of phillipines President Ramon Magasaysay who died in an aircrash in 1957.

Very Recent Treaties, Acts, Agreements and Conferences

Nuclear Non-proliferation Treaty. The U. S. A. and the U. S. S. R. have reached an agreement on 'Non-proliferation' by virtue of which there will be some limitations on the non-nuclear countries. The proposed agreement prohibits non-nuclear states from carrying out nuclear explosions even for peaceful purposes. India, Sweden, Brazil. West Germany and Rumania have refused to sign treaty which does not concede even to their basic demands.

The demands are ;—

(*i*) The national security of non-nuclear signatories should be safeguarded through a system of guarantees.

(*ii*) The reduction of nuclear stock piles and (*iii*) The unfettered pursuit of peaceful nuclear research should be open to all so that the super powers do not enjoy a perpetual economic and technical advantage.

The two powers are determined to add to their lists more and more signatories through pressure tactics. U. S. A. will put pressure on India and other Afro-Asian countries to sign the treaty and the U. S. S. R. on European countries.

It is to be seen whether India succumbs to these pressnre tactics or carries through.

Outer Space Treaty. It is an international treaty governing Space Exploration, signed unanimously by Britain, U. S. S. R. and U. S. A. on January 27,1967.

The Outer Space Treaty officials designated as, "The Treaty on the Principles of the activity of States in the Exploration and use of Outer Space, including the Moon and other Celestial Bodies" (1) prohibits the orbiting of the atomic weapon (2) basis their installations on the moon or other planets and (3) lays down rules for peaceful co-operation among all nations in space exploration.

Guam Conference on Vietnam. On March 18 and 19, 1967 President Johnson of the United States of America conferred on Pacific Island of Guam regarding situation in Vietnam and the fresh course to be adopted, with Marshal Ky, the South Vietnam Premier, General William Westmoreland, the U. S. Commander in Vietnam, Mr. Robert Mcnamara, U. S. Secretary for Defence. Mr. Dean Rusk, the U. S. Secretary of State.

In a brief statement on arrival in the island the President said "we shall discuss the progress and future course of our military efforts in Vietnam. We will review our diplomatic initiaives and we will try to estimate the chances of bringing peace to Vietnam through an honourable settlement."

Glassboro Summit. Soviet Prime Minister Alexie Kosygin went to New York to attend the special emergency session of the U. N. General Assembly which began on June 17, 1967. This gave an opportunity to the President Johnson to discuss with the Soviet Prime Minister such topics of international importance as The Middle East Crisis, Vietnam and other problems.

Glassboro (New Jersey) was selected to be the venue of talks which lasted for 4 days from 23rd June to 26 June, 1967.

Unfortunately the two leaders could not settle anything concrete, rather they concluded the conference in utter disagreement. The two leaders however departed with a better understanding of each other and their respective views so that they may meet sometime thereafter again to explore solutions agreeable to both the power blocks.

Fourth Arab Summit : The Arabs suffered a crushing defeat at the hands of Israel during Arab-Israel War in June, 1967. Nasser had suffered the most because it was he who announced only a couple of days before the War actually started that 'We will destroy Israel within 4 days'. The disastrous defeat had had a very sobering effect on him.

It was thought fit to sit and ponder with a calm head to find some way out to liquidate the consequences of this ill-fated War. But as was feared the Arabian countries divided into two separate groups—one favouring recognition of the Israeli State and the other for imposing sanctions even on the Western allies of the Israel Govt. what to speak of the Israeli State itself. It seemed that the Conference would end without any concrete decisions on account of such diverse political complexions and aims.

But the Conference did yield some fruitful results as it passed about eight resolutions of common interest. They had 7 political and about fourteen economic points on the agenda.

Before it wound up on September 1, 1967 the meeting took the following decisions :—

(1) **Israel** : The meeting unanimously decided that no Arabian countries simply or collectively would either recognize the Israel State or negotiate with her for peace.

(2) **Israel's Western Allies.** The meeting was unanimously against imposing any sanctions on Britain and the U.S,A. regarding Oil supplies to these two countries. They also decided not to withdraw their bank deposits from these two countries.

(3) **Arab Unity** : The participants pledged to make efforts to consolidate and add to their military strength so that they may meet the future aggression with firmness.

(4) **Foreign Bases** : All Foreign Bases on the Arab soil were to be removed without any delay.

(5) **Economic Cooperation** : A resolution was passed for the establishment of a development fund to be financed jointly by the oil-producing countries and used for development purposes in Arab States.

(6) **Help to U.A.R. and Jordon.** The meeting approved of setting up of a fund of 130 million pounds to help U.A.R. and Jordon make up their losses on account of Arab-Israeli War and as a result of closure of the Suez Canal.

(7) **Yemen** : On November 5, 1967 there was a coup in Yemen in which the revolutionaries ousted the Yemeni President Abdullah AL Sallal. Al Qadi Abdel Rahman AL Iryani has been chosen as provisional head of state. The Coup was in a way 'bloodless'.

The U.A.R. and South Arabia unanimously agreed on the constitution of a 3-power Committee to supervise withdrawal of U.A.R. troops from Yemen.

The Committee composed of Sudan, Iraq and Moroco.

Fifth O.A.U. Summit : The fifth meetting of the African heads of states and governments which lasted for 4 days from 11th to 14th September, 1967 took place in KINSHASA (CONGO). This meeting was attended by 18 heads of states including Emperor Haille Selleisi of Ethiopea and Ministers from 19 states. Malawi was not represented. U. Thant attended the meeting as a special invitee.

While inaugurating the meeting, Emperor Haile Sellesie said, "It is our duty to face the realities of Africa. Political crises have so much plagued our continent these past years that our economic and social development programmes are in serious danger.

U-Thant also expressed great regret for not being successful in ending colonialism.

Following are the few important ,resolutions adopted in this meeting :—

(*i*) **West Asia** : Immediate withdrawal of the Israeli forces from the Arab territory. It was further resolved that the presence of Israeli forces would be regarded as the presence of a foreign power on sovereign African territory.

(*ii*) **Nigeria** : The assembly reaffirmed its faith and confidence in the Federal Government of Nigeria and it was decided to send to Lagos an advisory mission consisting of Emperor Haille Selessie and the Presidents of Niger, Ghana, Congo, Liberia and Cameroon to assume the Govt. of Nigeria of the OAU's desire to safeguard the territorial integrity, unity and peace of Nigeria.

(*iii*) **Congo** : A Committee consisting of representatives from the neighbouring states of Congo and Ethiopia was formed to find ways and means to end trouble in Congo which the hired mercenaries created from time to time.

A number of other important topics were also discussed. Britain's policy in Rhodesia, Nato countries' aid to Portugal and nations doing trade with South Africa highlighted the discussions.

REPORTS, COMMISSIONS AND COMMITTEES IN THE NEWS

Hazari Report. Dr. R. K. Hazari, well known economist of Bombay was appointed in July, 1966 an advisor to the Planning Commission. He was charged with the task of studying the licensing procedure adopted by the Government of India in 1951 and its working.

Dr. Hazari submitted his final report in the second week of September, 1967. Following are his major recommendations :—

(i) Licensing policy should specify only direction of investment and not lines of manufacture.

(*ii*) Licenses should be necessary only for ventures involving Rs. 1 crore or more.

(*iii*) Expansion programmes costing less than Rs. 25 lakhs should be allowed to be undertaken without fresh license.

(*iv*) Licenses for new lines of manufacture should not be made compulsory.

Dr. Hazari, in his report, says that during 1959-1966 the house of Birlas got the maximum number of licenses.

Dr. Hazari also suggested regulation of banking credit with reference to the country's overall requirements, and planning restriction on big business in the matter of raising public finance.

Thacker Commission. A Commission comprising of Prof. M. S. Thacker, member of the Planning Commission, Dr. H. K. Paranjpe and Mr. S. Mohan Kumarmanglam has been recently appointed by the Govt. of India with a view to go into the working of the industrial licensing system being followed in the country for the last ten years.

The Committee which is being headed by Prof. M. S. Thacker, will enquire whether some large industrial houses had secured under advantage in the matter. It will also see whether there is any justification for preferential allotment of licenses and asses as to what extent licenses issued to large industrial houses resulted in depriving the smaller industries.

The Committee has been asked to submit its report within six months.

Education Commission. The Government of India appointed an Education Commission in 1964 to review and recommend ways and means of improving the educational system in vogue in the country. Dr. B. S. Kothari, Chairman of the University Grants Commission, headed the Commission. Besides Dr. Kothari, there were a number of eminent Indian and Foreign educationists to assist him in this task.

The Committee submitted its report on June 29, 1966. It recommended modification of the three language formula, an integrated education structure consisting of 12 years of school education and a 3 year degree course followed by a 2 or 3 year course for a second degree, regional language as media of instruction at University stage and English in Universities having an all-India character, a nation wide anti illiterary compaign, restriction of admission to colleges, part-time education and correspondence courses, higher pay scales for teachers etc.

The Government has initiated action on these recommendations.

Dayal Commission. The Union Government on November 2, 1967 set up a high-power inquiry commission to probe the "causes and course of major communal disturbances" in Bihar, Maharashtra and U.P. since August 1, 1967.

It is headed by Mr. Raghuber Dayal, retired judge of the Supreme Court, and the other two members are : Col. B. H. Zaidi, M.P., and Mr. M.M. Philip, former Secretary, Government of India.

Besides indicating grave concern over the communal riots and its awareness of the need for a deep study of the problem, the Centre's action is significant in view of the delay by the Bihar Government in instituting its promised inquiry into the Ranchi riots.

This is only one of the reasons that prompted the Centre to act. The other reason is that the events in more than one State are to be looked into.

The Commission's role is three-fold. It will find out the cause of the communal trouble in each case, inquire into the "adequacy of the administrative measures taken to prevent and deal with the disturbances", and recommend preventive steps.

Though the commission will submit its final report by April 30 next year it has been asked to send interim reports on each incident to enable the authorities to take follow-up action without loss of time.

The specific incidents to be inquired into by the commission are those at Ranchi and Hatia (August 22-28) and Sur-Sand (Oct. 13-15) of Bihar, Jaunpur and Suchetpur (Sept. 24-25) in Gorakhpur district of U P., and Sholapur (Sept. 17). Ahmadnagar (Sept. 18) and Malegaon (Sept. 24) of Maharashtra.

Tax Advisory Committee. The Union Ministry of Finance appointed a Committee to advise the Government on the ways of bringing understanding between the I. Tax Department and the Tax payers and also to promote co-operation from the assesses. The Committee consists of 13 members, four M. P. S., two representatives of trade & industry, six non-officials, three officials and the Minister for Revenue and Expenditure.

Mehta Committee on Assam. The Union Home Minister Mr. Y. B. Chavan convened a conference in July 1967, comprising of leaders of Assam representing divergent views so as to secure unanimity on the reorgainzation of Assam. No solid agreement could be arrived at. Hence the Home minister decided to constitute an 21-member sub-committee headed by. Mr. Asoka Mehta to find out some possible solution to the problem acceptable to all. The committee was to submit final report by 31st August, 1967 which it did. It rejected the fedreal set-up which had been proposed in January, 1967. It also rejected the demand for a separate will state. Instead it recommended setting up a full fledged democratic set up for each of the hill districts. It recommended that (i) a seprrete legislature for each district called the executive council and the leader of the majority party to be called Chief Executive councillor (ii) Some of the state subjects comprising of local communications, police, small industries river communication of navigation, hydro electric and other power generation and major road communication and schools-upto middle standard should all be transferred to the districts (iii) Districts be given option to merge with each other, if they so desire under certain conditions (iv) Restriction on the State Assemblies not to pass laws concerning districts without the permission of the Chief Executive Councillior.

The Estimates Committee. The Estimates Committee of the Lok Sabha in its report, presented to the House on August 11, 1967, on the utilization of foreign aid, caused grave concern to the people of the country by disclosing India's repayment obligations so far as foreign debts are concerned. On March 31, 1967 India's foreign debts totalled 4797 crores of which nearly Rs. 3,000 crores was repayable only in foreign currencies.

The major creditors are :—

1. World Bank	264 crores
2. U. S. A.	1200 crores
3. U. K.	480 crores
4. West Germany	353 crores
5. Japan	160 crores
6. International Devlopment Association	454 crores

Repayments neutralized 30% of the total foreign asssistance during the last year of Third Five Year Plan.

Under the circumstances taking into consideration, the economic condition of the country, the Committee warned the government against getting loan on short term basis and at commercial rates. The Committee further advised the government to see that the project aid was utilized in such a manner as to generate sufficient resources to meet repayment obligation in time.

The Committee also submitted its findings. It disclosed that during the Second Five Year Plan only 52% of the foreign aid was utilized. This figure however, rose 64% during the Third Plan but in some important sectors like power, Steel and Agriculture the utilization was less than 50%.

According to official estimates, on April 1, 1967, the unutilized amount of foreign loans and credits stood at Rs.1269.56 crores. Commodity assistance from U.S.A. under PL—480 have not been taken into account.

The Committee has advised the government to secure future loans on long term and soft basis. Otherwise it will be very difficult to cope in time the heavy repayment obligations.

The Mahajan Commission. The Mahajan Commission—the one Man Commission was appointed in October, 1966 to go into the border disputes among Maharashtra, Mysore and Kerala. It submitted its report to the Union Government on August 28, 1967.

The Mahajan Commission has rejected the claim of Maharashtra to the town of Belgaum along with 40 more villages in Belgaum Taluk. However, it has recommended the transfer of some villages in Belgaum district from Mysore to Maharashtra.

Out of a total of 814 villages claimed by Maharashtra, the Commission has recommended the transfer of 264 villages along with the towns of Nipani, Khanpur and Nagaland, covering an area of 656.3 sq. miles. The total population transferred is 2,81,000 Marathi-speaking percentage being 79.1

The Commission has also rejected the counter-claim of Mysore State to the textile town of Sholapur, the Taluka of north Sholapur. However, it has recommended the transfer of 247 villages from Maharashtra to Mysore with a population of 3.49 lakhs, of which 2.02 lakhs are Kannada speaking and 1.47 lakhs non-Kannada speaking including 0.88 lakh Marathi-speaking people.

The report of the Commission was officially released here on Nov. 2, 1967.

So far as Kasaragod Taluk is connected, the Commission on the ex-parte material placed before it has commenced that this Taluka north of the Chandragiri and Payaswi rivers be transferred to the State of Mysore from Kerala on administrative, economic and geographical considerations and on grounds of facility of communication which in the opinion of the Commission, override linguistic consideration.

The effect of the recommendations is that the Marathi-speaking population in Mysore would be reduced by 1.34 lakhs and the Kannada-speaking population in Maharashtra would be reduced by 1.64 lakhs.

National Youth Service Scheme : The Union Education Ministry organized a two-day Conference of Principals of selected Colleges from different parts of the country.

The conference, organized by the Union Education Ministry, was attended by about 40 principals.

It suggested that the scheme be called "National Youth Service"instead of national service programme, as suggested by the Ministry in its draft scheme.

The Principals were in complete agreement with the Ministry's scheme which envisages the NCC. the National Service Corps and sports and games as the three alternatives from which a student has choosen one.

They recommended that suitable programmes be chalked out in all the three wings of the service : all the wings'] should have complete parity, enjoying the same status.

A student should not be sent for university examination unless his performance in the field he has chosen is satisfactory. The degree certificates should mention the grade in which a student is placed in the National Youth Service.

FINANCIAL GRANTS

The conference also agreed that there should be no financial incentives to the teachers as such for taking part in the service, but an honorarium should be given to them as in the NCC to meet out-of-pocket expenses.

It, however disagreed with a recommendation of one of its groups that the Government should debar degree-holders from appointment to the service if they are not qualified in the National Youth Service. Instead, it suggested that the universities themselves should detain students from appearing at their examinations if the students' performance is unsatisfactory.

An important recommendation of the conference is that facilities for sports and games should be given to all students. There should be social service camps for those who choose the sports and games wing.

Besides the prescribed number of hours for the elective wing, students should be permitted to take part in other wings.

The programme suggested for the rural sector in education, health and sanitation and for the urban sector slum clearance adult education, and emergency services under the National Service Corps.

Kashmir Probe Commission. Mr- P. B. Gajendragadkar, former Chief Justice of India, will head the high level 3-man commission appointed by the Kashmir Government on November 4, 1967 to go into the grievances of people of various regions of the State and examine the causes of regional imbalances.

The other two members are :— Mr. B.S.S. Jayabji, former Ambassador to Japan, and Mr. Shankar Prasad, former Union Government Secretary for Kashmir affairs. The Jammu and Kashmir Government on Nov. 8, 1967 announced the terms of reference of the Gajendragadkar Commission which will consider the causes that led to irritation and tension in Kashmir and recommend remedial measures.

It will, in particular, assess the present position in respect of development programmes recruitment to Government services and admissions to educational institutions and the granting of scholarships and loans. It will recommend steps to assure their equitable distribution in various regions and among various communities consistent with the needs of backward communities, classes and groups and for mantaining efficiency in the administration.

The commission is to make its recommendations as soon as possible.

Ayyar Commission. The Bihar Government appointed on 6.11.67 a one man Commission headed by Mr. T.L, Venkatarama Ayyar, a former judge of the Supreme Court to probe charges of corruption against former Chief Minister K. B. Sahai and five other ex-Ministers (Mr. M. P. Sinha, Mr. S. N. Sinha, Mr. Ram Lakhan Singh Yadav being most prominent).

Mr. K. B. Sahai and three former ministrs mentioned above filed a writ with Patna High Court challenging the validity of the appointment of the Ayyar Commission of enquiry to probe into charges against them.

The petitioners had said that the constitution of the commission against them was an outcome of political rivalry and personal animosity and, therefore, it was malafide.

Rejecting the above contention of the petitioners, the Chief Justice, Mr. R. L. Narsimham and Mr. Justice B. N. Jha, held that the Coalition Government had announced its decision to set up the commission as early as last March.

The judges objected in their nine-page judgment that the arguments of the Advocate-General that the petitioners were utilizing the court as a forum for propaganda had force.

The judges also rejected the claim put on behalf of the petitioners that the notification was null and void since the term of the Governor, Mr. M. A. Ayaangar, had expired before it was signed.

The judges observed that the affidavits filed on behalf of the petitioners contained ample reasons calling for the dismissal of the petition. They also observed that the petition was notably filed late and just when the inquiry was round the corner which showed that it was an attempt to forstall the inquiry at the last moment.

MISCELLANEOUS IMPORTANT TOPICS.

(*i*) New Planning Commission. (*ii*) Nagarjunasagar Dam. (*iii*) Sabarigiri Hydel Project. (*iv*) Koyana Project. (*v*) Cochin Shipyard. Project. (*vi*) MBT-70. (*vii*) MIRV. (*viii*) Shiv Sena. (*ix*) National Integration Council. (*xi*) The World Bank. (*xi*) UNESCO.

(*i*) **The New Planning Commission:** The Planning Commission was set up in March 1950 to formulate Plans for the most effective and balanced utilization of the country's resources.

Political freedom is of little significance without economic well-being of the country. The economic development is a concurrent subject for both the States and the Centre. Hence for a coordinated approach, the birth of the Planning Commission.

But the Planning Commission had lost all faith with the people and hence there was a state of flux, for a considerable long time. This 'Planning Commission' needed certain reforms in its composition, working outlook before it could again foster faith in the people.

The Government of India, on September 1, 1967 announced appointment of Dr. D.R. Gadgil as its Deputy Chairman in place of Asoka Mehta.

Mr. Ashoka Mehta while handing over charge listed the following immediate tasks before the Commission. :—

(*i*) Preparation of the annual plan for 1968-69 (*ii*) Finalization of the 4th Five Year Plan (*iii*) Reorganization of administrative work (*iv*) Preparatory work on the Fifth Plan.

Mr. Asoka Mehta also declared since the draft of the Fourth Five Year Plan was published in August 1966, "rupee finance has become as serious a problem as foreign exchange".

It is hoped that Prof. D.R. Gadgil will infuse new life in the Commission. He has promised that the annual plan for 1968-69 would be ready before the budget next year. Regarding finalization of the Fourth Plan, he was not sure when it would begin and whether it will be for 5 years or more.

Four new members have been appointed and the work divided as mentioned below :—

(1) Dr. D. R. Gadgil (Deputy Chairman) : Economic Group, Plan Cordination, Plan Evaluation and administration.

(2) Mr. R. Venkata Rao : Industry, Labour, Transport and Power Group.

(3) Mr.B. Venkatappaiah : Agriculture and Rural Development.

(4) Dr. B.D. Nag Chaudhry : Scientific Research and Social Services Group.

(*ii*) **Nagarjunsagar Dam** : Nagarjunsagar Dam the 165 crore—project the founation stone of which was laid by the late Pandit Jawahar Lal Nehru 12 years ago has completed-Prime Minister Indira Gandhi released the Waters of the Krishna River into the Jawahar and Lal Bahadur Canals—taking off from the right and left banks of the river where the new dam has been built.

(*iii*) **Sabari Giri Hydel Project**. This project which was declared open on 28th of August, 1967 took seven years to build and has cost about Rs. 37 crores. It is the largest hydel project so far built in Kerala at Moozhiyar in the western ghats. The project is capable of generating over 7 million units of energy per day.

(*iv*) **Koyna Project.** The koyna project is a Rs. 76 crore project for 50000-tonne aluminium plant at koyna in Maharastra.

The plant is being put up by Bhrat Aluminium Company, a public sector undertaking, in collaboration with a West German firm.

(*v*) **Cochin Shipyard Project.** This project is being built with Japanese collaboration at a cost of Rs 36 crores. The Japanese concern Mitsubishi Heavy industries Ltd will provide technical collaboration for its construction.

Initially the shipyard will turn out only one 66000 DWT ship every year but by 1981 it is hoped that it will turn out two ships a year.

The first ship will be completed by 1974–75.

(*vi*) **MBT 70.** It is a tank built in four years time by the U. S. A. in collabaration with the West Germany. The most surprising aspect of this tank is that it can work alright even when it is submerged in water. It will surpass all the known armoured vehicles in use in the world.

(*vii*) **Mirv.** (Multiple Individually Guided Re-entry vehicle).

It is a new multiple nuclear warhead invented by the American scientists. This new weapon will be able to fire a very large number of nuclear missiles so that even the strongest antimissiles shall not be able to totally destroy it. The number of missiles fired will be much more than the antimissiles can intercept.

(*viii*) **Shiv Sena.** This party with its slogan 'Maharashtra is for the Maharastrians' has been very severely criticised by leaders of all parties. As is evident the party spreads 'regionalism' which is contrary to the very essence of our Constitution. It is, today, being headed by Mr. Bal Thakrey.

(*ix*) **National integration Council.** Pt. Jawahar Lal Nehru, on September, 1961, called a National Integration Conference in New Delhi. President S. Radhakrishnan inaugurated it and a National Integration Council was set up with very high aims and objectives. But it did not succeed and very soon went into oblivion.

Very recently Mr. Y. B. Chavan has started a drive to infuse fresh life to this Council taking into consideration the communal happenings in the country. whether it will again succeed or not, it is to be seen.

As before the Council will be presided over by the Prime Minister and will have as members all the Chief Ministers of the States, leaders of all the political parties in the Parliament, Commissioner of Lingnistic Minorities and some nominated persons from all walks of life.

(*x*) **The World Bank** (or International Bank for Reconstruction and Development I. B. R. D.)

Conceived at the Bretton Woods Conference in July 1944, the Bank began operations in June, 1945. Its purpose is to provide and facilitate international investment for increasing production, raising living standards and helping to bring a better balance in world trade.

The Bank makes loans to Member Countries out of its subscribed capital, out of funds raised by borrowings, and net earnings.

On 31 Dec. 1964 the Bank had made 402 loans totalling 8352 million dollars in 74 of its 102 member-countries or their territories, of this amount, 500 million dollars was for post-war reconstruction in western Europe and the remainder for development projects, chiefly in electric power, transportation, industry, agriculture and communications.

The Bank furnishes a wide variety of technical assistance services, ranging from full space economic surveys to investigations or advice on particular projects.

The Bank has its headquarters in Washington. It has 16 executive Directors.

(*xi*) **United Nations Educatonal, Scientific and Cultural Organization (UNESCO). Origin** : A conference for the establishment of an Educational, Scientific and Cultural Organization of the United Nations was convened by the Government of the U. K. in association with the Government of France and met in London 1-16 Nov. 1945. UNESCO came into being on 4 Nov. 1946.

Functions. The purpose of UNESCO is to contribute to peace and security by promoting collaboration among the nations through education, science and culture in order to further universal respect for justice, for the rule of law and for the human rights and fundamental freedoms which are affirmed for the peoples of the world, without distinction of race, sex, language or religion, by the Charter of the United Nations.

Activities. The education programme has three main objectives : the extension of education, the improvement of education and education for living in a world community.

To train teachers specialized in the teachiniques of fundamental education- UNESCO is helping to establish regional and national training centres. UNESCO seeks to promote the progressive application of the right to free and compulsory education for all and to improve the quality of education every where. It encourages scientific research designed to improve the living condition of mankind. Science co-operation offices have been set up in Monteviddo, Cairo, New Delhi and Jakarta. Its headquarters are at Paris (France).

GOVERNMENT OF INDIA

The Union Government

President	Dr. Zakir Hussain
Vice-President	V. V. Giri
Prime Minister	Srimati Indira Gandhi
Diputy Prime Minister	Morarji Desai

The Union Cabinet

Cabinet Ministers.	*Portfolios*
1. Srimati Indira Gandhi Prime Minister	Atomic Energy Department, External Affairs
2. Morarji Desai Dy. Prime Minister	Finance Minister
3. Y. B. Chavan	Home
4. Dinesh Singh	Commerce
5. Jai Sukh Lal Hathi	Labour and Rehabilitation
6. Jagjiwan Ram	Food and Agriculture
7, Dr. Karan Singh	Tourism and Civil Aviation
8. Asoka Mehta	Planning, Petroleum & Chemicals and Social Welfare
9. P. Govinda Menon	Law
10. C. M. Poonacha	Railways
11. Dr. Ram Subhag Singh	Parliamentary Affairs and Communications
12. Dr. V. K. Rao	Transport and Shipping
13. Dr. M. Cheena Reddy	Steel, Mines & Metals
14. Dr. Triguna Sen	Education
15: K. K. Shah	Information and Broadcasting
16. Satya Narayan Sinha	Health, Family Planing and Housing
17. Sardar Swaran Singh	Defence
18. Fakhruddin Ali Ahmed	Industrial Development and Company Affairs

Ministers of State

1. Bali Ram Bhagat	Attached to the Prime Minister
2. Dr. S. Chandrashekhar	Health and Family Planning
3. Parimal Ghosh	Railways
4. Srimati Phulrani Guha	Social Welfare
5. Jaggannath Rao	Works and Supply
6. L. N. Mishra	
7. K. C. Pant	Finance
8. K. Raghuramaiah	Law
9. Dr. K. L. Rao	Irrigation and Power
10. Raghunath Reddi	Industrial Dev. & Company Affairs
11. P. C. Sethi	Steel, Mines and Metals
12. Prof. Sher Singh	Education
13. Anna Sahib Shinde	Food and Agriculture
14. V. C. Shukla	Home Affairs
15. M. S. Gurupadswamy	Atomic Energy
16. Bhagwat Jha Azad	Education
17. I. K. Gujral	Parliamentary Affairs

Deputy Ministers

1. Bhanu Prakash Singh	Industrial Dev. and Company Affairs
2. Surendra Pal Singh	External Affairs
3. Shafi Quereshi	Commerce
4. Bhakt Darshan	Transport
5. D. Erring	Food, Comm. Dev. and Co-operation
6. Jahanara Jaipal Singh	Tourism and Aviation
7. D. R. Chavan	Law
8. S. C. Jamir	Railways
9. Mrs. Nandini Satpathi	Information & Broadcasting
10. B. S. Murti	Health & Family Planning
11. Sardar Iqbal Singh	Works, Housing & Supply
12- K. S. Ramaswamy	Home Affairs
13. Dr. Miss Sarojini Mahishi	Minister without Portfolio
14. Mohanlal Chaturvedi	Parliamentary Affairs
15. J. B. Mathial Rao	Parliamentary Affairs
16. M. Mohan Dharia	Parliamentary Affairs
17. Jagannath Pahadia	18. Sidheshwar Prasad
19. Ram Sewak	20. Mohd Yunas

INDIAN PARLIAMENT

Lok Sabha Speaker—N. Sanjiva Reddy.

Lok Sabha Dy. Speaker—R. K. Khandelkar.

Lok Sabha Leader—Srimati Indira Gandhi.

Rajya Sabha—Chairman—V. V. Giri.

Rajya Sabha—Dy. Chairman—Mrs. Violet Alva.

GOVERNORS & ADMINISTRATORS

1. The States

1. **Andhra Pradesh**—Governor : Patom Thanu Pillai. Chief Minister : K. Brahamanand Reddy. Area : 10,686 sq. miles. Population : 359,83,447. Capital : Hyderabad. Principal Language : Telugu.
2. **Assam**—Governor : Vishnu Sahay. (B.K. Nehru. To be appointed in January 1968.). Chief Minister : Bimla Prasad Chaliha. Area : 47,197 sq. miles. Population : 1,18,72,772. Capital : Shillong. Principal Languages : Assamese and Bengali.
3. **Bihar**—Governor : Nityanand Kanungo. Chief Minister : Mahamaya Prasad Sinha. Area : 67196 sq. m. Population : 4,64,56,610. Capital : Patna. Principal Language : Hindi.
4. **Gujrat**—Chief Minister : Hitendra Desai. Area : 72,245 sq. m. Population : 2,06,33,350. Capital : Ahmedabad. Principal Language : Gujrati.
5. **Hariyana**—Governor : B. N. Chakravarty. Capital : Chandigarh. Principal Language : Hindi.
6. **Jammu & Kashmir**—Governor : Bhagwan Sahaya. Chief Minister : G. M. Sadiq. Area : 86,023 sq. m. Population : 35,90,976. Capital : Srinagar. Principal Languages :—Kashmiri, Dogri and Urdu.
7. **Kerala**—Gevernor : V. Vishwanathan. Chief Minister.

E. M. S. Namboodripad. Area : 15002 sq. m. Population : 1,69,03,715. Capital : Trivandrum. Principal Language : Malayalam.

8. **Madhya Pradesh**—Governor : K. C. Reddy. Chief Minister. Govind Narayan Singh Area : 1,71,217 sq. miles. Population : 323,72,408. Capital : Bhopal. Principal Language : Hindi.

9. **Madras**—Governor : Sardar Ujjal Singh. Chief Minister : C. N. Annadurai. Area : 50,332 sq. m. Population : 3,36,86,953. Capital—Madras. Principal Lanauage : Tamil.

10. **Maharashtra**—Governor : P. V. Cherian. Chief Minister : V. P. Naik. Area : 1,18,717 sq. m. Population : 3,95,53,718. Capital : Bombay. Principal Language : Marathi.

11. **Mysore**—Governor : Gopal Swaroop Pathak. Chief Minister : S. Nijalingappa. Area : 74,210 sq. m. Population : 2,35,83,772 Capital : Bangalore. Principal Language : Kannada.

12. **Orissa**—Governor : Dr. Shaukatullah Ansari. Chief Minister : Rajendra Narayan Singh Deo. Area : 60,164 sq. m. Popolation : 1,75,48,846. Capital : Bhubaneshwar. Principal Language : Oriya.

13. **Punjab**—Governor : Dr. D. C. Pavate. Chief Minister : Gurnam Singh. Area : 47,108 sq. m. Capital : Chandigarh. Principal Language : Punjabi and Hindi.

14. **Rajasthan**—Governor : Sardar Hukum Singh. Chief Minister : Mohanlal Sukhadia. Area : 1,32,157. Population : 2,01,55,602. Capital : Jaipur. Principal Language : Rajasthani and Hindi.

15. **Uttar Pradesh**—Governor : B. Gopala Reddy. Chief Minister : Charan Singh. Area : 1,13,654 sq. m. Population : 7,37,46,401. Principal Language : Hindi.

16. **West Bengal**—Governor : Dr. Dharamvir. Area : 33.892, sq. m. Population : 3,39.29,279 Capital : Calcutta. Principal Language : Bengalee.

17. **Nagaland**—Governor : Vishnu Sahay (Also Governor of Assam). B. K. Nehru (From January. 1968). Chief Minister : Shilo Ao. Area : 6,366 sq. m. Population ; 3,69.200. Capital : Kohima.

II Union Territories

1. **Delhi**—Lt. Governor : A. N. Jha.
   Chief Executive Councillor of Metropolitan Council : Vijai Kumar Malhotra. Area : 573 sq. m. Population 26,28,612. Capital : Delhi. Principal Languages : Hindi. Urdu and Punjabi.
2. **Goa, Daman and Diu**—Lieutenant Governor : Nakul Sen. Chief Minister : Dayanand Bandodkar. Area : 1.426 sq. m. Population : 6,26.978. Capital : Panaji. Principal Languages : Marathi and Konkani in Goa. Gujrati in Daman and Diu.
3. **Himachal Pradesh**—Lt. Governor : Lt. Gen. K. Bahadur Singh. Chief Minister : Y. S. Parmar. Area : 1,10,815 sq. m. Population : 13,51,144. Capital : Simla. Principal Languages : Hindi and pahari.
4. **Manipur**—Chief Commissioner and administrator : J. M. Raina. Area : 8,628 sq. m. Population : 7,80,037. Capital : Imphal.
5. **Pondicherry**—Chief Commissioner and Administrator : S. L. Silam. Chief Minister : Farooq Maricar. Area : 184 sq. m. Population: 3,69,079. Capital : Pondicherry. Principal Languages French and Tamil.
6. **Tripura**—Chief Commissioner : S. P. Mukherji. Chief Minister : Sachindralal Singh. Area : 5,036 sq. m. Population : 3,69,079. Capital : Agartalla.
7. **NEFA** (North East Frontier Tract)—Administrator : The Governor of Assam acting as agent of the President who is assisted by an advisor. Area : 31,476 sq. m. Population : 3,86,558. H. Q. Shillong.
8. **Andaman and Nicobar Islands**—Chief Commissioner : B. N. Maheshwari. Area : 3.219 sq. m. Population : 63,538. H. Q. Port Blair.

9. **Dadra and Nagar Haveli**—Administrator : Aari Sharma. Councillor : K. C. Padlani. Area : 189 sq. m. Population : 57,663. H. Q. : Silvassa.

10. **Laccadiv, Minicoy and Amindive Islands**—Administrator : M. Ram Munny. Area : 11 sq. m. Population : 24,108. H. Q. Kavaratty.

THE STATE MINISTRIES

1—ANDHRA PRADESH

Cabinet Ministers

Ministers	*Portfolios*
1. K. Brahamanand Reddi Chief Minister	General Admin. Planning Industries. Irrigation and Power, Home, Transport
2. P. Thimma Reddy	Agriculture & Animal Husbandry
3. V. V. Raju	Revenue & Civil Supplies
4. Thota Ramaswamy	Panchayeti Raj
5. J. V. Narsinghrao	Health and Medical Affairs
6, T. Raghavavulu	Education
7. Konda Lakshman	Labour, Information and Publicity
8. P. V. Narsinghrao	Law, Prisons and Endowments
9. B. V. Gurumurthy	Industries
10. N. Chenchuramu Naidu	Municipal Administration
11. V. Vijaya Bhaskar Reddy	Co-operation
13. Ramlinga Raju	Religious Endowments
14. S. Siddha Redy	Medium & Minor Irrigation
15. K. V. Narayan Reddy	Planning, Law & Economic Affairs
16. Md. Ibrahim Ali	Prisons & Waqfs
17. Arge Ramaswamy	Social Welfare
18. V. Satyanarayan Rao	Excise & Prohibition

2—ASSAM

Ministsrs	*Portfolios*
1. B. P. Chaliha Chief Minister.	General Administration, Appointments, Home, etc.
2. K. P. Tripathy	Finance and Labour
3. G. S. Teron	Tribal Affairs
4. J. B. Hagjer	Education
5. M. M. Choudhry	Revenue, Forests, Irrigation
6. R. C. Baruah	Supply, Excise, Trade & Commerce
7. L. P. Goswami	Agriculture
8. S. M. Deb	Health, Relief & Rehabilitation
9. M. M. Hazarika	Fisheries and Jails
10. Abdul Matlib Majumdar	
11. L. P. Goswami	Agriculture
12. Bishwadeva Sharma	Industries, Mines & Minerals

Ministers of State

1. Syed Ahmed Ali	Education & Waqf Properties
2. Mrs. Padma Kumari Gohain	Social welfare
3. Prabin Kumar Choudhry	Transport & Parl. Affairs
4. D. N. Hazarika	Community Development
5. Altaf Hussain Majumdar	
6. Ranendra Basumatter	Revenue and Forests.

Deputy Minister

1. Dandi Ram Dutta —

3—BIHAR

(Non-Congress Ministry)

1. Mahamaya Prasad Sinha Chief Minister.	Gen. Administration, Heavy Industries, Sugarcane & Jail
2. Karpuri Thakur Dy. Chief Minister	Finance & Education.
3. Kamakhaya Narayan Singh	P. W. D., Mines & Minerals
4. Ramanand Tewari	Community Dev. Police & Gram Panchayet

Ministers		*portfolios*
5. Chandrasekhar Singh	...	Irrigation & Power, River Valley Projects
6. Indradip Sinha	...	Revenue
7. Vijoy Kumar Mitra	...	Agriculture and Irrigation
8. Ram Deo Mahto	...	Co-operation
9. Basanta Narayan Singh	...	Excise and Forests
10. Bhola Prasad Singh	...	Local Self Govt. Housing & Tourism
11. Kapildeo Singh	...	Food Supply, Commerce and Religious Trust
12. Srikrishna Singh	...	Animal Husbandary, Transport, Public Health Engg. Dept.
13. Basawan Singh	...	Labour, Employment, Planning
14. Hasibur Rahman	...	Law, Information & Waqfs.

Ministers of State

1. Mahabir Paswan	...	Harijan Welfare
2. Rudra Pratap Sarangi	...	Agriculture and Irrigation
3. Sabhapati Singh	...	Finance
4. Upendra Nath Varma	...	Education
5. Rampati Sing	...	Employment and Industries
6. Bishundhari Lal		
7. Philimon Topo		
8. Simon Tigga		
9. Mohanlal Gupta		
10. B. P. Jawahar		
11. Rupna Oraon		
12. Mohd, Azimuddin		
13. Promod Kumar Mishra		
14. Sham Sunder Prasad		
15. Satrughna Besra		

4—GUJRAT

1. Hitendra Desai Chief Minister.	...	General Admin., Planning, Home, Information etc.
2. Thakorebhai Desai	...	Agriculture, Co-operation, Forests etc.

Ministers	*Portfolios*
3. Babubhai J. Patel	... Civil Supplies & Electricity
4. Jashwant Mehta	... Finance and Industry
5. Gordhandas Chokhawala	Education and Municipalities
6. Fatehsingh Rao Gaikwad	Health, Fisheries and Jail
7. Premjibhai B. Thakkar	... Revenue, Law and Judiciary
8. Shantilal R. Shah	... Prohibition, Excise, Rehab
9. Chimanbhai Patel	... Road Transport, Par. Affairs

Deputy Ministers

1. Madbavlal Shah	... Agriculture, Co-operation
2. Mrs. Urmilaben Bhatt	... Public Works and Health
3. Dayaram Patel	... Home, Information, Irrigation Civil Supplies
4. Shantilal S. Shah	... Revenue.
5. Himmatbhai M. Rajwadi	Social Welfare, Prohibition ... and Excise

5—JAMMU & KASHMIR

1. G. M. Sadiq, Chief Minister	... General Administration Law and Order and Judiciary
2. Girdharilal Dogra	... Revenue, Land and Judiciary
3. Dwarika Prasad Bhat	... Finance, Excise etc.
4. Md. Ayub Khan	... Health and Local Self Govt.
5. Peer Ghyasuddin	... Industries and Power
6. Thakur Ranjit Singh Jamwal	... Public Works and Transport

Ministers of State

1. Ghulam Rasool Kar	... Under Chief Minister
2. Abdul Ghani Goni	... Under Finance Minister

Deputy Ministers

1. Sardar Gurumukh Singh	Rehabilitation
2. Parmanand	... Transport

Ministers	*Portfolios*
3. Mohommad Din Bande	Information and Publicity
4. Noor Mohammad	Under Chief Minister
5. Mufti Sayed	
6. Mohammad Shafi	Animal Husbandry

Parliamentary Secretaries

1. Abdul Aziz Zaffar	Chief Parliamentary Secretary
2. B. L. Kohstani	Parliamentary Secretary
3. Dharam Pal	Parliamentary Secretary

6—KERALA

(Non-Congress)

1. E.M.S. Namboodripad Chief Minister	Gen. Admin., Home, Planning. Civil and Criminal Justice, Information and Publicity.
2. K. R. Gauri Thomas	Revenue. Law, Food Supplies
3. E. K. Imbichi Baya	Transport, Communications
4. M. K. Krishnan	Forests, Harijan Welfare
5. M. N. Govindan Nair	Agriculture, Animal Husbandary, etc.
6. T. V. Thomas	Industries and Commerce
7. P. R. Kurup	Irrigation, Co-operation
8. P. K. Kunju	Finance, Insurance and Registration
9. C. H. Mohammad Koya	Education and Waqfs Board
10. Ahmed Kurrikal	Panchayats, Fisheries, Community Devlopment
11. T. K. Devikaran	Public Works' Tourism etc.
12. B. Wellingdon	Health, Ayurveda and Public Health Engineering Dept.
13. Mathai Manjooran	Labour, Training and Employment.

7—MADHYA PRADESH

(New S. V. Dal Cabinet—4-8-1967)

Ministers of Cabinet Rank

1. Govinda Naryan Singh, (Chief Minister)	... General Administration, Publicity, Labour, Agriculture & Tourism
2. Virendra Kumar Saklecha, (Dy. Chief Minister)	... Home
3. Brij Lal Verma	... Law, P.W.D. (Irrigation), Natural Resources, Jail, Co-operation, Rehabilitation, Economics & Statistics and Languages
4. Gopal Saran Singh	... Commerce and Industry
5. R. P. Sharma	... Food and Civil Supplies.
6. Dr. R. C. Rai	... Public Health
7. N. P. Srivastava	... Public Works (Roads and Buildings)
8. Raja Virendra Bahadur Singh	... Planning
9. Arif Beg	... Co-operation
11. Ganesh Ram Anant	... Harijan Welfare
12. L. N. Gupta	... Revenue & Land Reforms
13. Dharampal Gupta	... Education
14. Balwant Sangle	... ...
15. Bhanu Pratap Singh	... Tribal Welfare
16. Ram Hit Gupta	... Finance
17. Drigpal Singh	... ...

Ministers of State

1. Sharda Charan Tiwari, 2. Mahendra Singh Killedar 3. Shashi Bhushan Singh, 4. Birendra Singh, 5. Naresh Johari, 6. Goverdhandas Khandelwal. 7. Fateh Bhanu Singh, 8. Dhannalal Chatdhary. 9. K. L. Mehta.

Deputy Ministers

1. Hetram Dubey, 2. Lakshmi Narayan Sharma, 3. Phul Chand Verma, 4. K. L. Mehta, 5. Prem Singh, 6. Bisheswar Prasad, 7. Brijpal, 8. Bipin Lal Patel, 9. Badrinath Jaideo.

8—MADRAS

(New Name : Tamizhagam)

(D. M. K. Ministry)

Ministers	*Portfolios*
1. C. N. Annudurai Chief Minister	Gen. Administration, Finance Planning, Police, Refugee,
2. V. R. Medunchezhiam	Education, Industry, Mines and Minerals
3. M. Karunanidhi	Public Works, Minor Irrigation and Transpart
4. K. A. Mathialagan	Food and Revenue
5. A. Govindaswamy	Agriculture and Animal Husbandry
6. Srimati Satyavani Muthu	Harijan Welfare and Information
7. S. Madhavan	Public Health
8. S. J. Sadiq Pasha	Public Health
9. M. Muthuswamy	Local Administration and Community Devlopment

9—MAHARASHTRA

1. V. P. Naik Chief Minister	General Admin. Home, and Planning
2. D. S. Desai	Revenue
3. S. B. Chavan	Irrigation and Power, Building and Communication
4. G. B. Khedkar	Rural devlopment
5. P. K. Sawant	Agriculture
6. Vinayekrao Patil	Co-operation
7. P. G. Kherr	Urban Devlopment
8. S. K. Vankhede	Finance, Law and Judiciary
9. M. D. Caudhry	Education and Forests
10. N. M. Tidke	Labour
11. Rafique Zakaria	Public Health and Waqfs
12. R. A. Patil	Electricity, Industries and Printing Presses
13, Y. J. Mohite	Housing, Road Transport Corp. and Savings

Ministers	*Portfolios*
14. M. A. Vairale	Social Welfare and Tourism
15. H. G. Vartak	Food, Civil Supplies, Fisheries
16. B. M. Yagnik	Pohibition

Deputy Ministers

1, B. J. Khatal
2, K. P. Patil
3. D. S. Jagtap
4. S. B. Patil
5. Madangopal Agarwal
6. Viankatarao B. Hirey
7. Sunderrao Appasaheb Solanke
8. Mrs. Pratiba D. Patil

10—MYSORE

1. S. Nijalingappa Chief Minister	Ceneral Admin, Agriculture, Industry and Commerce
2. Mohammad Ali	Transport and Tourism
3. S. R. Kanthi	Law
4. B. D. Jatti	Food and Civil Supplies
5. M. V. Ram Rao	Home (Police) and Labour
6. R. M. Patil	Municipal Administration
7, Virendra Patil	P. W. D. and Electricity
8. B. Rachiah	Revenue and Food
9. Ram Krishna Hedge	Finance and Planning
10. K. Pulloswamy	Health and Housing
11. D. Devraj Urs	Animal Husbandry and Fisheries
12. G. Narayan Gowda	Social Welfare
13. K. V. Shankar Gowda	Education
14. P. M. Gowda	Co-operation

Deputy Ministers

1. Abdul Ghaffar	Finance
2. Alur Hanumanthappa	Minor Irrigation
3. K. Dayanand Sagar	Sericulture
4. G. B. Shankar Rao	Revenue
5. H. C. Boriah	Transport

Ministers	*Portfolios*
6. A. P. Appana	Industry
7. G. Ram Krishna	Animal Husbandry and Fisheries
8. D. P. Pawar	Agriculture.

11—ORISSA

(Non-Congress Ministry)

1. Rajendra Narayan Singh Deo : Chief Minister.	Finance, Home, Planning and Co-ordination.
2. Pabitra Mohan Pradhan Dy. Chief Minister.	Political, Services, Education, Mining and Geology.
3. Raj Ballabh Mishra	Agriculture and Animal Husbandry and Labour.
4. Surendranath Patnaik	Revenue, Irrigation & Power
5. Harihar Patel	Industries, Commerce.
6. Santanu Kumar Das	Excise, Tribal Welfare.
7. Nityanand Mahapatra	Supply and Cultural Affairs.
8. N. Ramasheshaiah	Health.
9. Harprasad Mahapatra	Law and Urban Development.
10. Dayanidhi Nayak	Works and Transport.

Deputy Ministers

1. Himanshu Sekhar Padhi	Revenue, Irrigation and Power.
2. Man Mohan Tudu	Tribal and Rural Welfare.
3. Murari Prasad Mishra	Forestry, Co-operation and Fisheries.
4. Ananta Narayan Singh Deo	Community Development and Panchayeti Raj.
5. Kartik Chandra Manjhi	Finance and Home.

12--PUNJAB

1. Gurnam Singh Chief Minister	Gen. Administration, Integration, Vigilence, Home, Judiciary, Transport, Jails, Cultural and Elections Affairs.
2. Baldeva Prakash	Finance, Industries, Planning, Cottage Industries, Health, and Education.

3. Lachman Singh Gill	Irrigation and Power, Roads and Buildings.
4. General Rajendra Singh "Sparrow"	Relief and Forests, Revenue, Land Reforms.
5. Payaralal Dhanowala	Printing and Stationery, Slums, Social Welfare, Backward Classes, Public Relations, Tourism.
6. Satya Pal Dang	Local Self Govt., Panchayats, Developments.
7. Krishna Lal	Labour and Employment.
8. Balwant Singh	Agriculture and Taxes.
9. Gurmit Singh	General Wefare, Health, Engineering, Animal Husbandry, Fisheries, Sports.
10. Baloo Ram	Co-operation.

Deputy Ministers

1. Faqir Chand	Industries.
2. Satnam Singh Bajwa	Vigilance, Judiciary, Jails.
3. Darbara Singh of Nakhdar.	Comm. Development.
4. Bishwambhar Nath	Finance and Planning.
5. Tikka Jaglar Singh	Health and Medical.
6. Sham Chand	...
7. Shiv Chandra	Revenue.

13—RAJASTHAN

1. Mohanlal Sukhadia Chief Minister	Appointment General Admin. Political, Appointment etc.
2. Mathura Das Mathur	Plannuig, Finance, Taxation, Excise etc.
3. Damodarlal Vyas	Home, Civil Defence, Jails and Medical.
4. Harideo Joshi	Industries, Mines, Irrigation and Power, Public Relations.
5. Brij Sunder Sharma	Revenue Labour, Bhasha Department.
6. Barkatullah Khan	Education, Law, Judicial and Dept.

7. Paras Ram Madrena ... Agriculture and Animal Husbandry, Co-opeeation and Panchayat.
8. Narayan Singh Masuda Social Welfare, Labour, Public Health, L.S. Govt., etc.

Deputy Ministers

1. Mahphool Singh ... Industries, Mines, Irrigation.
2. Dhir Singh ... Education.
3. Ganga Ram Choudhry... Revenue, Famine, Relief, Appointment.

14—UTTAR PRADESH

(Sanyukt Vidhayak Dal)

1. Charan Singh Chief Minister ... Home, Planning and General Admin.
2. Ram Prakash Gupta Dy. Chief Min. ... Education and Cultural Affairs.
3. Ram Swaroop Varma ... Finance.
4. Ram Chandra Vikal ... Animal Husbandary, Fisheries and Forests.
5. Jai Ram Varma ... Agriculture and Panchayat Raj.
6. Jharkhande Rai ... Food and Civil Supplies.
7. Prabhu Narayan Singh Industries and Labour.
8. Ganga Bhakt Singh ... Co-operation.
9. Udit Narayan Sharma... Revenue, Scarcity and Rehab.
10. Tambareshwar Prasad... Irrigation & Power.
11. Pratap Singh ... Medicine & Health.
12. Mangal Deo Visharad ... P.W.D. & Govt. Estate.
13. Akhtar Ali ... Excise & Muslim Waqfs.
14. Shayamlal Yadhav ... Industries, Legislature and Information.
15. Barmeshwar Pandey ... Mun. Housing, Badrinath Temle and Charities.
16. Man Singh Yadhav ... Transport and Tourism.

Deputy Ministers

1. Rustam Salim ... Home, Civil Defence, etc.
2. Om Prakash Singh ... Education and Social Welfare
3. Anant Ram Jaiswal ... Animal Husbandry, Fisheries
4. Roop Nath Yadhav ... Agriculture & Comm. Dev.

5. Mahi Lal	Com. Dev. & Panchayat Raj
6. Lhamim Alam	Food and Civil Supplies
7. Himmat Singh	Industries & Labour
8. Zorawar Verma	Co-operation
9. Rajendra Singh Yadhav	Revenue, Relief & Rehab.
10. Ram Prasad Deshmukh	Irrigation and Power
11. Krishna Bahadur Mishra	Medical & Health
12. Md. Asrar Ahmad	L. S. G. & Mun. Housing

UNION TERRITORIES

1—DELHI

(Metropolitan Council)

1. Vijaya Kumar Malhotra	Chief Executive Councillor
2. Shiva Narayan Sharsunia	Elected Member
3. Amar Chand Shuba	Elected Member
4. Ram Lal Varma	Elected Member

2—GOA, DAMAN & DIU

(Maharashtrawadi Gomantak Party)

1. D. Bandodkar Chief Minister	General Administration, Home, Agriculture and Fisheries
2. Anthony J. d' Souza	Land, Industries, Labour
3. Gapal Gouda Nayecker	Education, Public Health

Deputy Minister

1. A. K. Usgaonkar	Planning & Development

3—HIMACHAL PRADESH

1. Dr. Y. S. Parmar Chief Minister	Gen. Administration, Home, Planning, Education, Finance, Forests, Industries
2. Dr. Lal Chand Parthi	Health, Revenue, Excise, Taxation, Co-operation
3. Hari Ram	Law, L.S.G., Supplies etc.
4. Ram Lal	Education, Agriculture
5. Sukh Ram	Finance, P. W. D. etc.

Deputy Ministers

1. Daulat Ram	Law Ministary
2. Kartar Singh Wazir	Under Chief Minister
3. Mahanga Singh	Under Chief Minister
4. Nek Ram Negi	Under Health Minister

MISCELLENEOUS IMPORTANT INFORMATION

Bokaro Plant's Construction Work Begins

Construction work of the Bokaro steel plant commenced from November 1967.

For this purpose Bokaro has been divided into the following ten zones—auxiliary shops, thermal power, turbo blowers station, blast furnace, coke oven and byproducts plant, sintering plant, steel melting plant, hot rolling mill, cold rolling mill and cooling plant.

The construction work has been entrusted to twelve contractors by the Hindustan Steel Ltd. which has already received orders worth Rs. 106,50 crores from the Bokaro Steel Ltd. for civil and construction works of the plant. Another order worth Rs. 36,30 crores has been placed by the Bokaro Steel Ltd. to the Hindustan Steel Ltd. for a steel structural work.

Aluminium Plant Likely At Latehar

An Aluminium factory estimated to cost Rs. 100 crores is proposed to be set up at Latehar in Palamau district.

The factory would have a capacity to produce 75,000 tons of aluminium per year for which there was plenty of raw material (bauxite) in Palamau. The factory would employ about 5000 persons.

Oct. 10, 1967.

Atoms-For-Peace Award

Scientists from France, Canada and the U. S. A. will share this year's 90,000 dollars Atoms-for-Peace Award.

They are Dr. Bertrand L. Goldschmidt, a director of the French Atomic Energy Commission, Dr. W. Bennett Lewis, British-born physicist working on atomic development in Canada and Dr. Isidor I. Rabi, a Columbia University physicist who conceived the first international nuclear research laboratory.

Women Have No Voting Rights In 7 Countries

According to a U. N. report released there are only seven countries where women have no voting rights and are not eligible for election.

They are Jordan. Kuwait. Liechtenstein, the northern region of Nigeria. Saudi Arabia. Switzerland and Yemen. In Saudi Arabia and Yemen, neither men nor women have electoral. Swiss women, while having no federal political rights. are eligible for election in some municipalities.

1967 Nobel Prize For Literature

The Guatemalan author, Miguel Angel Asturias, has been awarded the Nobel Prize in literature for 1967.

The Swedish Academy said in its citation that the Guatemalan author was awarded the prize for his highly coloured writings rooted in a national individuality and Indian traditions"

Mr Asturias, born in 1899 in Guatemala City has spoken out strongly against dictatorships oppressing the native population living in misery. He spent many years in exile in Argentina, Italy and France.

Mr. Asturias has earlier received a number of awards including the Lenin peace prize which Soviet authorities bestowed on him in 1966 for his books dealing with social problems of Mulato and Indian peasants in his country.

He began publishing poems in several literary magazines in 1918 and won literary renown in Latin America in 1930 with "Leyendas be Guatemala" (Legends of Guatemala), in which he presented myths and legends.

Not until he was 47 in 1946 was his first novel published and generally hailed as a master-piece "El. Senor President"

(Mr. President) was, translated into 16 languages and marked the rise of its author as an internationally recognized novelist.

(For other Nobel Prizes For 1967 see pages 68-69 of this book.)

Nuclear Weapons

Modest 10-Year Plan Will Cost 1,700m. dollars.

The total costs of nuclear weapons programme are likely to come close to the expenditure incurred by the French or the British, estimated at between 8.000 million dollars and 9,000 million dollars (between Rs. 6,000 crores and Rs. 6,750 crores), over a period of about 10 years.

This is clear from the text of a report submitted by a team of 12 international experts to the U. N. Secretary-General. Dr. Vikram Sarabhai, head of the Indian Atomic Agency, is one of the experts.

A country can make a start on the nuclear road with a modest programme involving not more than an expenditure of 170 million dollars (about Rs. 140 crores) a year for 10 years. This suffice for simple nuclear warheads as well as an unsophisticated delivery system and will be within the reach of a number of nations.

"These cost figures, however, bear hardly any credibility as representing a limit lasting for any significant time, even for an industrialized country. The reasoning is that after having acquired the initial unsophisticated nuclear weapon system, the need to develop a less vulnerable and more sophisticated delivary system seems certain to be felt in order to secure the political and military objectives of the force". The 170 million dollars estimate relates, for example, to plutonium bombs as distinct from the hydrogen bomb exploded by China recently.

The financial costs will depend on the size of the already existing industrial base, the more so for delivary vehicles—whether missiles or bombers. In most cases, delevery will cost more than the nuclear warhead. While a moderate programme of 10 warheads per year, each of 20 kilotons, will cost about 188 million dollars (Rs. 140 crores), a force of 50 to 60 medium-level bombers will need 940 million dollars (Rs. 705 crores).

The report is careful to underline that materials and manpower requirments will be, even for an industrialized country, more formidable than the financial cost. To build and deploy 50 missiles of intermediate range a peak labour force of 18,000 will be needed over 5,000 of them scientists and engineers. The continuous production of warheads will call for 1,300 engineers and 500 scientists. "The most highly-qualified fraction" of all scientists, engineers and technicians available will have to be allocated to the nuclear programme.

The report presents a graph to bring out the economic and social implications of the kind of expenditure nuclear programmes will involve. India for instance, spent 245 million dollars on health and 582 million dollars on education as against 1,702 million dollars on defence in 1964. Since a nuclear programme does not normally permit reduction of conventional defence preparation the cost of bombs and warheads will have to be added to the existing defence bill.

Nuclear Power Station By October, 1968.

Mr. Chavan, Union Home Minister, announced the first nuclear power station in the country was expected to be commissioned in the western zone at Tarapore by October 1968.

This power station would be owned and operated by the Centre and the entire power generated would be divided equally between Maharashtra and Gujarat.

Inaugurating the sixth meeting of the Western Zonal Council of which Maharashtra, Gujarat and Goa are members, Mr Chavan said that the demand for power in the zone had been steadily increasing but at the same time, the power supply position in the zone had continued to be statisfactory.

While in Maharashtra, both hydro and thermal power had been developed, the power development in Gujarat continued to be basically thermal. In Goa, Daman and Diu, small and isolated diesel power stations were in operation but the main requirements there were being met by drawing bulk power supply from Gujarat and Mysore.

"During the Fourth Plan, this Union territory will be drawing more and more bulk power from Mysore to meet its growing power requirements", he added.

Mr Chavan said the per capita consumption in Maharashtra as well as in Gujarat had been consistently higher than the all-India average. By the end of the Fourth Plan, the per capita consumption of Maharashtra and Gujarat was expected to be 181 KWH and 142 KWH respectively as against the all-India average of 120 KWH. Out of the total 54,810 villages in the zone, 6,408 villages were electrified by the end of the Third Plan. During the Fourth Plan period, electricity supply was proposed to be extended to about 12,300 additional villages.

Mr Chavan said that in the context of rapid development of the country one factor which tended to block progress was the unhindered growth of population, the growth rate being 2.5% per annum. To check this trend the familly planning programme had been taken up by the Government as a Centrally-sponsored national programme. The success of the programme would depend on the co-operation received from the State Governments.

India Has Fourth Largest Army

Defence expenditures of various nations given in the seventh annual report of the Institute for Strategic Studies in London, show that India is spending 4.7 per cent of its Central budget on Defence.

Against this, the USA is spending 8.9 per cent of the gross national product and 53 per cent of its total Central Government expenditure; UK 6.7 per cent and 26 per cent; France 5.1 per cent and 22 per cent; West Germany 5 per cent and 34 per cent; Japan 1.1 per cent and 8.4 per cent; Indonesia 3.9 per cent and 9 per cent; Israel 10.7 per cent and 31 per cent; Soviet Union 5.7 per cent and 16 per cent and Pakistan 3.2 per cent and 18 per cent.

The report, entitled The Milltary Balance, also gives the total strength of the armed forces of various countries. It puts the total of India's armed forces at 869,000 the fourth largest in the world.

The report says the Soviet Union has 3,150,000 men, the USA 2,660,000 to be raised to three million, China 2,486,000 plus "excluding milllons of irregulars, France 557,000, Britain 440,000, West Germany 438,000 and Pakistan 188,000 to 208,000 plus para-military force of 70,000.

The report puts India's current defence estimates at Rs. 9,952 million or 1325 million dollars.

The Institute's own conclusions of its report are given in a Press release which says, "the strategic superiority of the USA over the Soviet Union is now less than it was a year ago when measured in long-range missiles available; there has been no marked improvement in China's strategic potential during the past year.

'India can produce 2 A-bombs a year'

The Canada-India Reactor (CIR) at Trombay near Bombay with a power rating of 40 thermal megawatts has the potentiality to make two atom bombs a year, according to statistics given in the Seventh Annual Report of the Institute for Strategic Studies here.

An expert of the institute from whose forthcoming book "must the Bomb Spread?" the statistics are reproduced in the report, explained at a Press conference the significance of the tables given in the report.

The expert, Mr Beaton, said that for an ordinary or average atom bomb, it had been calculated that five killograms of plutonium was needed and that four thermal megawatts had the capacity to yield one kilogram of plutonium.

Mr. Beaton added that it was on the basis of such a calculation that it had been estimated that India's present atomic reactor, if it was switched over to production of nuclear weapons, could produce at the rate of two atom bombs a year.

New reactors

A second tale in the report on power reactors lists the four new nuclear reactors which India is either building or proposes to build.

The potentialities of the new reactors to make atom bombs are given as follows: "Tarapur with an estimated power rating of 380 electrical megawatts, 76 possible bombs a year; Rajasthan reactor with a rating of 200 electrical mw, 40 possible bombs annully: and Madras nuclear station with an estimated rating of 400 electrical megawatts. 80 possible bombs a year.

The institutes Director. Mr Buchan, made it clear tbat the analysis about bombs was only hypothetical and it was not assumed that the reactors would be switched over to nuclear arms production.

PERSONS IN NEWS

Abdul Hamid : Company Quarter Master Havildar Abdul Hamid was awarded Param Vir Chakra post humously for 'most compicuous bravery in a battle in the Kasur Sector during the Indo-Pakistan War, 1965. He destroyed two Pakistani Patton tanks and severly damaged another. In that action this brave non-commissioned officer was hit by an enemy tank fire and died on the spot.

Baidyanath Sen : A 23 year-old bachelor from West Bengal who distinguished himself by swimming Palk-Strait in April 1967.

Chiang Ching : Wife of Mao-Tse-tung, the Chinese leader. She heads the Red Guards, the army of young Chinese raised by Mao.

Clay Cassius : World's heavy-weight boxing champion since 1964.

Dayan Moshe : The Israel general who gave a crushing defeat to the Arabs during recent (June, 1967) Israel-Arab War. In 1956 he was Chief of Staff of the Israeli forces during Suez War but retired in 1957. He was appointed as Defence Minister in June 1967.

Eshkoe Levi : Prime Minister of Israel.

Gajendragadkar, P. B. : Former Chief Justice of India (1964-66), now Vice-Chancellor of Bombay University. He headed the D. A. Commission which submitted its report in June 66. Now he will head the high level Commission (2. 11. 67) to be appointed by the Kashmir Government to go into the grievances of people of various regions of the State and examine the causes of regional imbalances.

Hee, Park Chung : President of South Korea-Elected for the second time.

Hunt, Sir John : Led the successful British expedition to Mount Everest in 1953.

Ho Chi Minh : (Born 1892) of North Vietnam. President Ho Chi Minh was in the news on 4. 11. 1967 when he was awarded the order of Lenin, the highest Soviet decoration. The award was issued by the Presideum of the Supreme Soviet in recognition of his being a consistent fighter for socialism. He was also described as an outstanding revolutionary and leader of the World communist movement. He was praised for strengthening Soviet-Vietnamese friendship.

Kaul, Gen. B.M. : A retired Indian Army Officer who has become known by his book 'The Untold Story' in which he has given his own interpretations of the events which were responsible for the India's reverses during Indo-Chinese War of 1962.

Komarov, Col. Vladimir : Russia's 40 year old cosmonaut who died while landing his space-craft Sayuz—1.

Lata Mangeshkar : The renowned Indian play-back film singer.

Leonov, Alexie : The first Russian cosmonaut who floated in space. He stepped out of his spaceship Voskhod—II at a height of 300 miles above the earth and floated in space for 10 minutes in March, 1964.

Linda Mcgill : An Australian woman-swimmer who recently broke the women's record for swimming the English Channel by crossing it in 9 hours 59 minutes.

Martova, Yevegnia : 28–year old Russian Lady pilot who set up a new record of speed in super-sonic flight (9. 3. 1967) covering about 2100 K.ms. per hour in an E–76 plane.

Mihir Sen : A Calcutta barrister and the first Indian to swim the Palk Straits on April 6, 1966. Also the first person in the world to swim across the Straits of Dardenelles on Sep. 12, 1966. He also successfuly crossed the Panama Canal on October 31, 1966.

Maharishi Mahesh Yogi : Disciple of the Vedantic scholar Brahmanand Saraswati ; he is a 56 year old Indian mystic who came in the news recently after he had accepted the Beatles of Britain as his disciples to give them training into the art of 'transcendental meditation' at the academy of the spiritual regeneration movemement at Rishikesh.

The Beatles were expected to reach Rishikesh in the first week of November, 1967 but business committments in the U.S.A. have impelled them to put their visit off till February, 1968.

Reita Faria. The 23 years old Indian medical student of Bombay who was elected 'Miss World' in London on Nov. 18, 1966. She angered the Govt. of India for accepting asignment to go to South Vietnam to entertain U- S. troops in Company with the American comedian Bob Hope.

Shankracharya of Puri, Jagatguru; He has been agitating to achieve a legal ban on cow slaughter throughout the country.

SVETLANA, Daughter of the late Soviet dictator Joseph Stalin who fled from her country and came to India where she stayed for about 3 months. She came here to immerse the ashes of her Indian husband Brajesh Singh.

SATYAJIT RAY, Awarded Magsay-say Award for Journalism and Literature for uncomprising use of the film as art, drawing theme from his nature Bengali literature to depict a true image of India.

Tyagaraja, A great poet ; composer and social reformer of south India whose 200th birth anniversary has been recently celebrated.

Heads of Important Posts, Commissions etc.

K. N. WANCHOO	... Chief Justice of India
Dr. Vikram Sarabhai	... Chairman, Atomic Energy Commission.
Dr. H. S. Sethna	... Director, Bhabha Atomic Research Centre.
D. R. Gadgil	... Deputy Chairman, Planning Commission.
H. C. Sarin	... President, Indian Mountaineering Federation.
J. M. O' Souza	... President of the Indian and Eastern Newspaper Society.

L. K. Jha	... Governor, Reserve Bank of India.
S. Ranganathan	... Comptroller and Auditor General of India.
C. K. Daphtary	... Attorney General of India.
NIREN, DE	... Solicitor-General of India.
V. T. DEHEJIA	... Chairman, State Bank of India.
Mrs. Indira Gandhi	... Chairman, Planning Commission.
Mrs. A. T. MATHAI	... Chairman, Central Social Welfare Board.
M. S. RAO	... Vigilance Commissioner of India.
K. Hanumanthaiya	... Chairman, Administrative Reforms Commission.
Jeevan Lal Kapur	... Chairman, Law Commission.
M. P. PAI	... Chairman, Hindustan Shipyard at Visakhapatnam.
D. S. KALHA (Major-Gen.)	... Director General of the National Cadet Corps.
K. R. NAIR (Rear Admiral)	... Flag Officer, East Coast, at Visakhapatnam (A newly created Post).
R. A. Looma (Major Gen.)	... Engineer in Chief, Army Head Quarters.
Arjan Singh (Major-Gen.)	... Director General Border Roads.

LATEST APPOINTMENTS

(AMBASSADORS AND HIGH COMMISSIONERS)

Foreigners

1. Nicolai M. Pegou	... Appointed Russia's Ambassador to India Vice M. I. A. Benedictor
2. Hans Adolf Biering	... Appointed next Ambassador of Denmark in India.
3. Peter Kos (Dr)	... Appointed next Hungarian Ambassador to India.
4. Slavko Komar (Dr)	... Appointed next Ambassador of Yugoslavia to India.
5. Brigadiar General Leonard Mulamba	... Appointed first Ambassador of Congo to India.

6. James George	... Appointed new High Commissioner of Canada to India.
7. George Schlumberger	... Appointed new Amdassador of Austria to India.
8. Uhla Maw	... Appointed new Ambassador of Burma to India.
9. Richard Ovorak	... Appointed new Ambassador of Czechoslovakia to India
10. Asko Ivalo	... New Ambassador of Finland to India.
11. M. Rashid	... New Ambassador of Iraq to India.
12. K. S. Parera	... New High Commissioner of Ceylon to India.
13. Jharendra Narayan Singh.	... Nepal's Ambassador to India.
14. Maurice Baker	... Singapore's Ambassador to India
15. A. O. Haastrup	... Nigeria's High Commissioner to India.

LATEST APPOINTMENTS

(Indian Ambassadors/High Commissioners Abroad)

1. S. S. Dhawan	... High Commissioner for India to U. K.
2. M. M. Khurana	... High Commissioner to Malawi.
3. P. Ratnam	... India's Ambassador to Mexico.
4. Maharaj Krishna Rasgotra	... India's Ambassador to Morocco.
5. R. Goburdhan	... India's Ambassador to Turkey.
6. C. S. Jha	... India's Ambassador to France.
7. S. J. Wilfred	... First resident High Commissioner for India to Guyana.
8. S. K. Banerji	... India's Ambassador to Japan.
9. N. V. Rao	... India's Ambassador to Norway.
10 U.C. Vijayaraghvan	... India's High Chmmissioner to Tanzania.
11. A. N. Mehta	... Indian Ambassador to Afghanistan.
12. K. B. Lal	... India's Ambassador to Belgium.
13. N. S. Gill	... India's Ambassador to Cuba.

14.	Khub Chand	... India's Ambassador to Finland.
15.	A. H. Safrani	... India's Ambassador to Denmark.
16.	K. M. Kannampilly	... India's Ambassador to Indonesia.
17.	R. S. Mani	... India's Ambassador to Greece.
18.	S. U. Patel	... India's Ambassador to Hungary.
19.	K. V. Padamnabhan	... India's Ambassador to Iran.
20.	S. Sen	... Indias's Ambassador to Lebanon.
21.	V. A. Kidwai	... India's Ambassador to Syria.
22.	Y. D. Gundevia	... India's High Commissioner to Ceylon.

LATEST CHANGES

Heads of Governments (World)

1.	Sama Duwa Sinwa	... President of Burma.
2.	Roland Michener	... G. G. of Canada.
3.	L. Mulumba	... P. M. of Congo (Leo)
4.	W. Ulbricht	... President of Germany (W)
5.	Constantine XIII	... King of Greece
6.	Dr Zakir Husain	... President of India.
7.	V. V. Giri	... Vice Prsident of India.
8.	General Suharto	... Acting President of Indonesia
9.	Tunku Ismail	... King of Malaysia.
10.	Zakaria Mohieddin	... P. M. of U. A. R. (Nov. 1967)
11.	Lieut. Gen Nguyen Van Thieu	... President of South Vietnam.
12.	Abdullah Al Sallal	... Yemini President ousted by revolutionaries (5-11-1967)

PLACES IN THE NEWS

Akhnoor. It is a place of strategic importance being supply line of the Indian troops in Jammu and Kashmir. It is on the Jammu-Naushera road.

Ankleshwar. In Gujarat. Has come in the news very recently. Oil wells have been discovered here. Drilling is in good progress.

Ambalamugal. Site of the Cochin Refinery, eight miles from Ernakulum. It is a joint venture of India and the United states and went into production on Sep. 23, 1966.

Alwaye. (KERALA) known for Monazite factory.

Ambarnath. Near Bombay; Machine Tools Prototype factory.

Avadi. Near Madras. Has recently come into the news for Avadi Heavy vehicles factory which was inaugurated in July, 1967. It is manufacturing 'VIJAYANTA tanks.

Aqaba. It is a gulf 100 miles long and 12 to 17 miles wide penetrating into North west Saudi Arabia and the Sinai Peninsula. uptil Arab-Israel war in June 1967, it was a closed Arab Gulf having no international character. But now Israel has occupied it during the war in June, 1967.

Barauni. In Bihar, known for a big oil refinery.

Bhilai. in Madhya Pradesh; famous for the Steel plant set up here in collaboration with the U.S.S.R.

Baiknour. Russian Spaceship launching station, about 1200 miles from Mascow.

Biafra. New name of Eastern Nigeria.

Belgaum. It has recently come in the news when by virtue of the Mahajan Commission's recommendation (4-11-1967) this town has been transferred to the State of Mysore. Belgaum till recently was the town of Maharashtra.

Cairo. It is the capital of U.A.R. It was in the news during Arab-Israel war in June, 1967. It was heavily bombed by the Israeli Air Force.

Canton. In south China. It was in the news in recent months due to violent demonstrations staged by the Red Guards resulting in violent clashes with the factory workers.

Cape Kennedy. U.S. space ships launching station and the military base for testing missiles.

Cambay Basin. In Baroda. It has recently come in the news for the discovery of oil fields here. Production has also started very recently.

Chittaranjan. In west Bengal, known for Chittaranjan locomotive works.

Cho-la. a mountain pass on the sikkim-Tibet border 32 miles from Nathu la. On October 1, their National Day, the Chinese fired on Indian troops stationed there.

Dardanelles Straits. It was in the news during Arab-Israel war in June, 1967 when the Russian fleet crossed through it.

It may also be noted here that Mihir Sen, the Indian barrister crossed it by swimming on Sept, 12, 1966.

Doklan. lying to the south of the traditional boundary between Bhutan and Tibet in the southern part of the Chumbi valley, it has recently come in the news for the Chinese intruded into this territory in April 1966 with a view to grab this part of the territory.

Digboi (Assam.) Has come into the limelight for rich oil-fields.

Eliat. It is an Israeli port founded in 1949. Now it has developed into a prominent naval base. The U.A.R. refused to allow the Israeli ships through the Suez Canal. Hence with the support of the U.S.A. a pipeline was laid from the port to the Haife refinery oil supplies from Iran and delivered at this port and piped to Haife on the Mediteranean coast.

This port has now become Israeli port for trade with Asia and East Africa.

Farquhar and Desroches :—These are the two Indian Ocean islands recently purchased by Britain eventually to turn them into Anglo-American bases. The Indian Government have lodged a serious protest with the U. K. but it seems that nothing would come out of it.

Haiphong :—North Vietnam port which came into the news on June 30, 1966 when the U. S. A. planes heavily bombed its fuel dumps. Haiphong enjoys a very stratagic importance for it contains nearly 60% of N. Vietnam's fuel storags capacity.

Ibadan :—Capital of western Nigeria. It came into the news on July 29, 1966 when a military coup against the Ironsi regime took place. Ibadan was the starting point of this coup which was successful in ousting the Ironsi regime. Gen. Ironsi was kidnapped and later killed by the rebels.

Jalahalli :—In Mysore state famous for the Hindustan Machine Tool Factory. It has also the Government I. A. F. Training school.

Jawalamukhi :—In kangra valley where drilling for exploration of oil is in progress.

Jeruslem :—Holy city or city of Peace of Jews. Great Historic association. Holy city for three world faiths—Muslims, Jews and christians. It remained under the Islamic rule till 1917 when it was occupied by the British. In 1948 it was divided between Israel and Jordon. It came again in the news during the Arab Israel war in June 1967 when the Israel forces captured the part under Jordon and demolished the wall that partitioned the city into two parts.

Khartoum :—Capital of Sudan was in the news as it was the venue of a summit conference of the Arab leaders who met recently to consider about the future of Yemen. President col. Gamal Nasser of U. A. R. and king feisal of Saudi Arabia took prominent part.

Kalakankar :—It is an earstwhile tiny state some 50 miles from Lucknow. It came in the news in March 1967 when Svetlana, Stalin's daughter, came here to immerse ashes of her husband Mr. Brajesh Singh an uncle of Raja of Kalakankar.

Kalamssery :— Here 4th unit of H. M. T. is being installed —a place near Ernakulam.

Kasaragod :—A Taluk in Kerala till recently, when the Mahajan Commission in its report on 4-11-67 recommended that it may be transfersed to the State of Mysore from Kerala on administrative, Economic and Geographical considerations and on grounds of facilty of communication, which in the opinion of the Commission overside lingusitic consideration.

Kathmandu Kodari Highway :—This highway a new road between Kathmandu and Kodari, on the northern Tibetan border, built by the Chinese, is causing great concern to the Govt. of India as it poses a great threat to India's security.

Kalol :—It has recently come in the news as oil wells have been discovered in this place. Drilling is in high progress.

Koyli :—In Gujarat, known for the oil refinery in Public sector.

Kisingini :—It is a town in Congo and was known Stanlyville. It came in the news in July 1966 when some Katangese soldiers, inspired by the former Prime Minister Moise Tsbombe staged a revolt. But it was mercilessly crushed.

Lunej :—In Gujarat has come in the news for the oil wells discovered recently.

Lopnor :—China's site for atom and Hydrogen—bomb test explosions. All the under installations of China are located in this place.

Montreal :—The largest city of Canada in Quebec province. It has come in the news as the world's greatest exhibition EXPO '67 (From 25 April 1967 to 27th Oct. 1967) was organized here. India also took part in this exhibition. Over 15 lakh people visited the Indian pavillion.

Mururoa :—A polynesian French island in the Pacific where on July 1966 France exploded an expermiental device of plutonuim fission. It was the first of a series of supersonic atomic explosion planned by France.

Naxalbari :—It was in the news when in April, May, 1967 a violent trouble started here. Some allege that it was supported by the Chinese but it has now been proved beyond doubt that it was just an uprising by the native tribes out of hunger and starvation. It was an economic revolt and not a political revolt.

Naxalbari is a small police station in the Phansi sewa area of Darjeeling district in West Bengal. This is the only Indian part which has common borders with Nepal, East Pakistan and the, Chumbi valley now occupied by the Chinese.

Nathula :—Nathula is a 14,600 ft. high ridge near the Sikkim border with China. It was the scene of mortar and artillery duel between the Indian and Chinese forces on September 11, 1967.

Panaji (old name Panjim) :—Capital of the Union territory of Goa, Daman and Dieu. It was in the news in January, 1967 when an opinion pole took place here to know whether the people would like this town to be merged with Maharashtra or not.

Rudarasgar :—Site of an oil-well (in Assam) which caught fire in January, 1967. The fire was brought under control with the help of Russian engineers.

Surpur. A small place about 15 miles from Tirichirapalli. It has very recently come in the news for 'Small Arms Factory' which is being established here to produce automatic rifles, light machine guns, carbines and conventional infantry rifles.

Tashkent. Capital of Uzbekistan in the U. S. S. R. Through the good offices of the Russian Prime Minister Alexie Kosygin, the Indian Prime Minister Lal Bahadur Shastri and the Pakistani President Mohd. Ayub Khan signed an agreement by virtue of which all the disputes between the two countries were to be solved by peaceful means. (For detailssee 'Tashkent Declaration).

Shri Lal Bahadur Shastri died on the 10th January, 1966 due to heart failure here.

Tel Aviv. City of Israel on the Mediterranean sea founded in 1909. It was in the news during Arab-Israel war (June 1967).

Trombay (Near Bombay), Known for oil refineries. Atomic reactors, atomic research laboratory.

Tiran. It was in the news during Arab-Israeli war in June, 1967. This small island between the Red Sea and the Gulf of Aqaba was closed by the U. A. R. in May 1967 to Israeli shipping, but the Israeli forces captured it during the war.

Visakhapatnam. Fifth Steel Plant is proposed to be setup here.

Yemen. Yemen was in the news in the first week of November, 1967 (5-11-1967) when the revolutionary forces ousted Yemini President Abdullah Al Sallah.

Zimbabwe. This is African name of Rhodesia. Demand for African Majority Rule in this part keeps it in the news.

INSTITUTE OF EDUCATION FO
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CALCUTTA-27

CURRENT AFFAIRS

1968

INDIA

INDIA TO-DAY

Twenty years back, the lamp of independence was lit, and there was light all over the country, a light that filled us with new hopes and expectations.

And then gradually as months faded into years, and years into decades the light began to grow dim. It went on growing dimmer and dimmer, till to-day, two decades after winning (or getting) independence it can be truly said that light has really gone out of our land. It has definitely gone out of our hearts. We are financially bankrupt, our economy is tottering. A vastly inflated currency is chasing the articles of daily use raising their prices sky high. Administration is reeking with corruption and inefficiency, Our University bodies have become cockpits of sectional, group or caste fights Student world is in turmoil. There is vicious race between the demand for higher wages and ever rising price level. We have yet to develop a sense of national oneness. We are not able to unite even on the question of adopting a national language. Our body politic is plagued with hundred and one warring political parties ranging from pink red to snow white.

This is where our grandiose plans, our experimental dabbling with mixed economy, our ideological fads and the tall talks of these twenty years have led us to. Our achievements in the sphere of foreign policy and diplomacy have been no less remarkable.

Some regional parties also contested. They were :—

[viii] [D. M. K.] Dravida Munetra Khazhagan.
[ix] Muslim Leage in Kerala.
[x] Jan Congress in Orissa.
[xi] Maharashtra Wadi Gomantak Party in Goa.

[xii] Akali Party in Punjab [Sant Group as well as Master Tara Singh Group].

[xiii] Bangala Congress in West Bengal.
[xiv] Jana Kranti Dal in Bihar.

The Stars for the Indian Notional Congress were not favourable this time. They suffered heavy defeats in 8 States. So much so that the President, Kamraj, also was defeated in his own home-town constituency. A good number of old stalwarts fell flat on the ground.

The Fourth General Election's results convinced that Congress was no more popular with the people and that it should be replaced by some other party to serve the country from the economic and political bankrupty.

Congress lost the States of Bihar, West Bengal, Orissa, Madras, Kerala, Punjab, Utter Pradesh and Rajasthan. It also failed to achieve absolute majority in the Metropolitan Council of Delhi Union Territory.

Later Congress suffered defeat in Haryana also. Rao Birendra Singh headed the Samyukta Dal ousting the Congress Ministry headed by Pt. Bhagwat Dayal Sharma.

In Uttar Pradesh Charan Singh, former Local Self Minister,revolted along with 16 others and formed Jan Congress Party. He was later elected leader of the joint opposition, the Sanyukta Vidhayak Dal and formed the Ministry, ousting the Gupta Ministry.

In Madras, the D.M.K. got 138 seats out of a total of 234 and formed the Ministry headed by Mr. Annadurai.

But the Congress emerged as a Majority Party in the Centre, though with greatly reduced majority. Out of 521, total No. of seats in Lok Sabha, Congress got only 281 seats Swatantra got 44, Jan Sangh 35, D.M.K. 25, S.S.P. 23, CPI [R. 23, CPI [L] 23, PSP. 23 and other 58.

This has changed the very texture of the Lok Sabha. The Opposition parties are in a triumph mood, following the unexpected increase in their strength.

Now let us ponder over the happenings in our country during the last year :—

Panjab Re-organized or Panjab Bifurcated.

In 1947 we saw the country divided. Pakistan was the product of the Britishers' mischief. They divided the country into two so that India may not live in peace for the time to come. And they did succeed what they forestalled.

They also left behind legacies which they thought would keep the country restless for ever. But alas, the people themselves created complicated issues which have not been solved even after twenty years of acheiving the independence. People forgot the old wounds inflicted by the outgoing rulers but demanded further mutilations of the country on some or other issues. Formation of separate Linguistic States within the country became the slogan of the day. The 'Motherland' was no more motherland for the Indians one and all. She was to be further bifurcated now on linguistic basis. 'Hindi' has not been accepted as the official language of the country by certain section of the people.

Consequently Andhra, Gujarat & Maharashtra were given birth to satisfy the demands of the people of those regions. It was obvious that such partition might set a chain reaction and there might be demand for the creation of more states viz Vidarbha, MIZORAM etc.

As was feared, the cry for the partitioning of the Panjab came from the Sikhs. They wanted separate Panjabi Suba for the Sikhs. Master Tara Singh undertook a fast into death, but withdrow the fast on the intervention of some intermediaries. The Government promised to look into the genuine grivances of the Sikhs community.

In August 1965 when India was fighting with Pakistan and the country was in the midst of 'life and death', Sant Fateh Singh resolved to undertake fast for 21 days and declared that if Panjabi Suba was not acceeded to he would burn himself alive.

Panjab DIVIDED.

The Government of India decided to reorganize the State on the linguistic basis so as to give birth to two states, Panjab and Haryana, after transferring to Himachal Pradesh such of the hill areas particularly of the Hindi region of the state as are contiguous to that union territory and have cultural and linguistic affirmities with it.

The Government appointed a three-man Commission on April 23, 1966 under the chairmanship of Mr. Justice J. C. Shah, Shri S. Dutt and M. M. Philip were the other two members. The Commission submitted its report and consequently the Panjab Reorganization Act came into effect on November 1, 1966.

Thus came into existence the two States of Panjab and Haryana.

Panjab comprises districts of Gurdaspur, (excluding Dalbousie, Balun and Bakloh), Amritsar, Kapurthala, Jullundher, Ferozpur, Bhatinda, Patiala, Ludhiana and Tehsils of Barnala, Malerkotla Sangrur.

Haryana comprises districts of Hisar, Mohindargarh, Gurgaon, Rohtak, Karnal and Tehsils of Naranigarh, Ambala and Jagadhri (Ambala Distt.).

Areas to be merged with Himachal Pradesh :—

Districts of Simla, Kulu, Kangra, Lahaul, and Spite, development blocks of Gagaret, Amb and Una, Tehsil Nalagarh (Ambala Distt, enclaves of Gurdaspur Distt. (namely Dalhousie, Balun and Bukloh in Chamba Distt).

Chandigarh will be Union Territory and will be the joint capital of the two states.

First it was decided to have a common Governor and common High Court. But now they have separate Governors. Mr. B. N. Chakravarty is the Governor of Haryana and Dr. Pavate, the Governor of Panjab.

Re-organization of Assam

The hill areas of Assam consist of four administrative districts namely the United Khasi and Jaintea Hills, the Garo Hills, the United Mikir and North Cachar Hills and the Mizo District. Their total area is 22,732 square miles out of the tolal area of 47,290 square miles of Assam, excluding the Nefa. These districts thus account for about 47% of the area of the State. The total population of these districts is however, about 11% of the State's population.

There are two main political parties in Assam—one is 'The Eastern India Tribal Union' (E.I.T.U.) and the other is 'The All-Party Hill Leaders Conference' The later party is very influential party in the State and is demanding nothing less than a separate Hills State.

On October 4, 1963 the Govt. of India outlined a plan of autonomy for the hill areas of Assam subject to the maintaining of unity in Assam' to a delegation of the A-PHLC.

A three man Commission headed by Mr. H.V. Pataskar, was, constituted by the Govt. of India on March, 1965. This Commission submitted its report to the Govt. in March 1966. The A-PHLC. rejected the report of the Pataskar Commission and the recommendations contained therein and demanded the immediate creation of the Eastern Frontier State for the hill people of Assam.

The situation became serious. A Sub-Committee of the Central Cabinet was constituted to consider and recommend measures for autonomy of Hill areas of Assam. The A—PHLC leaders reiterated their demand for a separate State. There was, however, unanimity on the need of an integrated development and closer understanding between hills and plains of Assam in the interest of security, defence and economic planning.

The A-PHLC decided to boycott the 1967 General Elections but at the instance of Mr. Y.B. Chavan accepted the federal structure proposal and gave up the poll boycott move.

On account of divergent views of the two main parties no agreement could be reached at regarding the 'Reorganization of Assam.' The A-PHLC demanded that separate State should be conceded if the Government of India failed to introduce the federal structure.

A round table conference was held on July 8 and 9, 1967 but the parties failed to come to any agreement. The Sub-Committee of the Conference headed by Mr. Asoka Mehta was requested to continue its efforts for finding out an acceptable formula. The A-PHLC representatives refused to associate with the sub-committee and reiterated their demand for the separate State.

The Asoka Mehta Committee submitted its report on the 31st August 1967. It rejected the federal set-up which had been proposed in January, 1967. It also rejected the demand for a separate hill state. Instead it recommended setting up a full fledged democratic setting for each of the hill districts.

It recommended (i) a separate legislature for each district called the Executive Council and the leader of the majority party to be called Chief Executive Councillor (ii) some of the State subjects comprising of local communications, police, small industries, river communications, and navigation, hydro electric and other power generation and major road communications, schools up to middle standards should all be transferred to the districts (iii) Districts be given option to merge with each other, if they so desire under certain conditions (iv) Restriction on the State Assemblies not to pass laws concerning districts without the permission of the Chief Executive Councillor.

The Asoka Committee has tried to satisfy both the plains people and the hill people. The time will tell whether recommendations contained in this report are acceptable to leaders or not.

Vivisection will ruin Assam : The Chief Minister of Assam, Mr. B.P. Chaliha, declared on Oct. 22, 1967 that "vivisection of Assam will bring ruin to the State and the people, and the Government of Assam will not accept any decision of the Centre which will be ruinous for this part of the country".

Inaugurating the Conference on 'Reorganization of Assam' at Goalpara the Chief Minister said: The issue of reorganization of Assam is not a matter of joke. If an error is committed on this issue, it will be beyond all correction at all time."

The political conference adopted a resolution reiterating the demand for implementation of the Mehta Committee's recommendations on reorganization of Assam which offered maximum autonomy with full legislative powers to the Hill areas. The conference rejected the demand of the APHLC for a seperate Hill State.

The Union Home Ministry has decided to refer the issue of reorganization of Assam to Members of Parliament to evolve a national consensus to solve the tangle following rejection of the Mehta Committee's recommendations by the APHLC.

The Chief Minister wondered as to what prevented the Union Government from accepting and implementing the recommendations of the all-party Mehta Committee which were unanimous.

In a voice full of emotion, Mr. Chaliha said, Assam was passing through a lot of troubles following the Chinese aggression. Now there was uncertainty and suspense over the future of this State, and, "taking advantage of this suspense, reactionary elements were raising their ugly heads.

Naga Problem : Naga problem has also not been solved so far. The Naga rebels insist on a separate sovereign state. The cease-fire agreement is being extended everytime. Talks held in September, 1967 ended very abruptly and the Naga leaders went back highly disgusted.

Chagla Quits. Mr. M. C. Chagla, Union Minister of External Affairs, on September 5, tendered resignation on account of his differences over the Governments' Educational policy of making the regional languages the media of instruction.

In his letter of resignation, Mr. Chagla wrote to the Prime Minister that the 5 year limit set for a Change over from English to regional languages at the under graduate level, 10 years for all stages of education would not only deteriorate the Educational standard of the country but also jeopardize the unity of the country. He believed in slow change over. His resignation was duly accepted by the President on the advice of the Prime Minister.

Nathula Skirmishes. Nathula, a 500-yards wide & 14600 ft. high mountain pass on the Sikkim-Tibet border at the southern tip of the Chumbi valley, hardly, 70 miles from the neck of land which connects Assam, Nefa, Nagaland,, Tripura & Manipur was the scene of an armed clash between the Chinese and the Indian troops in the second week of september, 1967.

The Chinese troops attacked Indian troops with mortars, 76 mm. guns & rifles. Indian troops fired back with their artillery and causing heavy loss to the Chinese. They (the Chinese) threatened to use air force in case the Indians did not stop firing. Subsequently the Indian side stopped firing and there is no news of any clash since then.

Though the mischief was started by the Chinese themselves, they had to cut a sorry figure. They are now fully convinced that the Indian troops to-day are equal to the occassion and that they can not repeat the 1962 show down again.

Bhartiya Kranti Dal. Bhartiya Kranti Dal is a new political party comprising of senior congress men who have defected from the Congress and have united under one banner. Mr. Maha Maya Prasad Sinha, the Bihar Chief Minister would be the leader of the party till December 1968.

In a five-day convention held at Indore the B. K. D. President Mr. M. P. Sinha categorically stated that the B. K. D. would not have any truce with the Congress under any circumstances. He further said that the attitude of the Dal to the ministries in different states would be governed by the supreme consideration of serving in the national interest and guarding the nation against forces of reaction. The B. K. D. would refuse to be identified with reactionary forces of the right and the left and would chalk out path of its own, based on philosophy of Mahatma Gandhi.

The party's agro-economic programme demands mainly the abolition of food zones and want the Government to build buffer stocks through compulsory levy with a view to stabilising prices at the same time compelling by law every farmer possessing a certain minimum area to deliver at fair prices a part of his produce.

Social Control of Banks and General Insurance.

The all India Congress Committee has drawn up a 10-Point programme. This programme is now before the Government. The programme comprises complete nationalization of the Banks and the General Insurance in the country.

Mr. Morarji Desai asked Mr. N. V. Panandhikar, an official of the Planning Commission to study and report on the practices of the Commercial banks. He was also asked to find out if there is any scope of the control exercised over banking institutions by the Reserve Bank of India.

Mr. A. Rajgopalan, an official in the Finance Ministry was entrusted the task of preparing such a report on the General Insurance.

The reports were duly submitted. The contents convinced the Finance Minister that the nationalization of the Banks as well as the General Insurance at this stage was not at all in the interest of the country. Hence he decided to go in for 'social control' of these two units. The main objective behind this proposal is to utilize the funds at the disposal of these institutions for the general good of the people instead of financing the selected big business guns.

In their report the two officials have declared that the banks have nearly Rs. 200 crores and the general insurance about Rs. 40 crores available for investment. At present nearly all the Directors of the banks are big industrialists and

Mr. Panandhikar suggests that not more than half the strength of Directors of banks should consist of industrialists the other half being derived from among agriculturists, economists, consumers and others.

Mr. Morarji Desai, on Nov. 8. 1967 declared that he wanted to put into practice the Govts' scheme for social control of banks. The banks will be required to have full-time Chairman for their boards and their appointments will be made with the concurrence of the Reserve Bank.

The appointment of Directors will also be brought under the surveileance of the Reserve Bank and specific provisions will have to be made to give representations to various interest like co-opêratives and small scale industries.

The Problem of language

It is a pity that even after twenty years of independence we have not been able to solve the language problem of our country.

During the pre-independence period when English was the only link language of the country, national leaders like Mahatma Gandhi vehemently protested against this as it was decidedly harmful to India culturally as well as politically.

With the dawn of independence, along with many other problems, language problem also came in the forefront. It was thought fit to replace English slowly within 15 years by Hindi. Then no one spoke against it. Eeven the leaders from the South endorsed it. But as time passed, the minds of the people began to think in different ways. 'Regional Languages' should be the media of instruction became the slogan of the day. People in the South began to look upon Hindi as the foreign language which fact they made public by open agitations. English was given preference to Hindi. They thought that this was being done only to dominate them. National sentiments got subdued and gave place to mutual misgivings and jealousies.

The Govt. of India appointed an Education Commission to find out some satisfactory solution to this problem.

The Education Commission in its report made public last year strongly pleaded for an early switch-over to the regional languages, in any case not later than 10 years. A number of Universities, have already permitted the use of regional languages for answering exammination papers. So much so the U. P. S. C. have also agreed to allow the examinees to answer their papers in any regional language. This will come into force within three years i. e, by 1970.

Language problem has become an eye-sore to the leaders of the country. This problem has to be solved this way or the other. National patriotism has been completely subdued and 'provincialism' has taken its place. National integration and unity have gone to the winds. The country has been sub divided into language states. Andhra, Gujarat, Maharashtra, Panjab and Haryana are the living examples. People became even violent to get their demands acceeded.

The Government have their own difficulties. Dr. Triguna Sen, the Union Education Minister, highlighted in the Lok Sabha, on July 19, 1967, the inherent difficulties in trying in haste to do away with English without a sufficiently developed and universally acceptable Indian link language to replace it.

It may be noted here for the information of the reader that the National integration Conference held in India in 1961 recommended the adoption of 'Three-language formula' for secondary education i. e. the teaching of the regional language, any other modern language and English in schools. Subsequently, in its report released to the presa on June 29, 1966, the Education Commission made some modifications and recommended that a student at school in India should learn (i) his mother tongue (ii) the official language or associate official language of the union (i.e. Hindi or English) (iii) a modern Indian or European language. It was further suggested that the students in South should learn Hindi besides their mother tongue and the students in the north should learn one of the South Indian languages in addition to Hindi".

This did not satisfy the Education Minister, Dr. Triguna Sen. He thought it was too much for a student to learn compulsorily the three languages. He appointed another Education Commission to find out more acceptable solution to this problem.

The Education Committee consisting mostly of MPs. gave their own suggestion. They recommended that during 10 years at school, a pupil should compulsorily study two languages i. e. his mother tongue and any one of the scheduled languages or English or any other foreign language. This came to be known as Two-language formula.

Now the question is that after all what is the final solution to this language problem. English, being the foreign language, cannot find permanent place here. It has to be replaced by some universally acceptable link language in the country. There should be one National link language all over the country which should be gladly accepted throughout the length and breadth of the country. The only relevant solution seems to be this that English should be allowed to retain its present position at least for next 15 years. Hindi should be allowed to replace it slowly and slowly. In addition, regional languages should be made compulsory at all stages. Hindi should not be looked upon as a foreign language but the Mother tongue of the country.

Population Problem and its Solution.

On the eve of independence the leaders of the nation never thought there would be so many problems—food problem, population problem, language problem and so on.

The population problem like so many other problems is causing great anxiety to the nation. If the population problem is solved satisfactorily the food problem will be automatically solved to some extent. According to the 1961 census, India's population was nearly forty four crores. Now it is 50 crores. By the year 1976, it is expected to range between 59 and 61 crores.

To study the different aspects of the problem a number of institutions have conducted studies and submitted reports. Gokhale Institute of Politics and Economics, Poona, the Office of the Registrar General of Census, India, the UN in collaboration with the Government of India in Mysore and the National Sample Survey Organization need special mention.

Some of the salient conclusions arrived at through these studies are :—

(i) The average number of children per couple is 6 and7 both in rural as well as urban areas.

(ii) Fertility in the age group of 20-24 is very high.

(iii) As compared to other countries like USA, India has an extremely young population. The following reasons are mainly responsible for the rapid increase in population.

(i) Marriage in India is considered part and parcel of the religion.

(ii) Early-marriage.

(iii) Grinding poverty.

(iv) Birth of children is normally looked upon as a good sign (v) lack of consciousness of family planning.

(vi) Fall in death rate.

It is quite evident that in case no firm steps are taken to check population, it is bound to increase with still rapid speed.

The Government are doing their best on their part. Crores of rupees are being spent on 'Family Planning' about Rs.27 crores were spent during the Third Plan. The proposed allocation during the Fourth Plan is Rs. 93 crores.

But so far family planning programmes have not yielded any satisfactory results. The alternative course is to liberalize the law governing abortion in the case of married ladies, imposition of heavy taxes on couples having more than three children and introduction of more easily available and easier methods of birth control etc.

OUR FOOD PROBLEM

India has vast agricultural lands and yet it is a matter of great concern that she has not yet been able to solve her food problem. She has not attained self-sufficiency in food and has to import large quantities of foreign food-grains.

India's dependence on foreign imports is a great drain on her economic and financial resources. India does not have much foreign exchange and a large part of it is consumed in obtaining food from abroad. This naturally reduces India's capacity to buy and import heavy machinery which is so badly required for her industrial growth. It also adversely affects our plans of procuring and manufacturing arms and military equipment necessary for the defence of the country.

Ever since independenca, the Government has been alive to the problem of food shortage in the country. During Pandit Nehru's regime a great deal of propaganda was done to encourage agriculture. But unfortunately in the first two Five Year Plans sufficient emphasis was not laid on agriculture. Heavy industry received more attention and agriculture did not register much improvement.

The problem of food shortage has many aspects. The chief features are the rapid increase in India's population and the continued indifference of the Indian farmer towards new and mechanised methods of cultivation. With the partition of the country in 1947, India lost the wheat growing areas of Western Punjab and the fertile rice fields of East Bengal. Thus while the area of fertile land was considerably reduced, the number of mouths to be fed rapidly multiplied. In fact one of the essential things to do is to restrict the rapid growth of population. Birth control methods and the use of artificial contraceptives must be popularised rapidly so that the birth rate may be kept under control.

The average yield from our land is tragically low. This is largely due to primitive methods of agriculture, lack of good manure and fertiliser and inadequate irrigational facilities. Since the dawn of independence some headway has been made in all these directions. The use of tractors has been encouraged. The size of the fields has been increased—at places by means of co-operative farming. The Government has set up agricultural colleges and farms to increase interest in agriculture. Provision has also been made for good seed. A number of fertiliser factories have been set up and the use of artificial fertilisers has been popularised. The Indian farmer is, however, not able to take full advantage of these facilities partly because of his lack of education and limited financial resources. In some states such as the Punjab and Haryana the position of the farmer is comparatively better but in others the conditions are far from satisfactory.

Irrigation plays a significant role in cultivation. The Government has invested huge sums of money in building up several dams and river valley projects. Bhakra-Nangal Dam in the Punjab and Damodar Valley Corporation in Bihar and several others are intended to remove the scarcity of water for cultivation. The sinking of tube wells and making of canals are efforts in the same direction. These measures are good In their own way but they have not solved the irrigation problems of the Indian farmer who, in many parts of the land, is still at the mercy of the uncertain monsoon. In fact what India needs is not so much the gigantic projects like the Bhakra Dam but a net work of electric tube wells all over the land.

The urgency of self-sufficiency in food has been brought to the forefront by the droughts in Bihar, M. P. and Rajasthan. It has also become clear that we have few friends in the international sphere. England and U.S.A. are openly partial to Pakistan. It is true the U. S. A. has offered us 9 lakh tonnes of food-grains but this is not sufficient. India, too, cannot afford to invest her meagre foreign exchange in food-grains at the cost of her defence preparedness. A new drive for self-sufficiency in food has been launched.

The immediate means of solving the food problem are economy in food consumption on the one hand and bringing the maximum vacant land under the plough without any loss of time. In the Fourth Five Year Plan greatest stress has been laid on agriculture. The output by the end of the Plan is expected to go up by 32 per cent which correspends to the targeted increase in food production.

But above all, we should lay greater stress on family planning. We have to stop the rapid growth of population on war footings. What can the planners do when after every third minute we have a new child in our country ?

OUR FOREIGN POLICY

Ever since the dawn of freedom India has tried to follow a policy of peace and goodwill towards her neighbours and the other nations of the world. Pandit Nehru formulated this policy and explained from time to time that peaceful co-existence or Panch Shila was the best salvation for the world. He was fully alive to the existence of the power blocs, the Western democracies and the Communist countries into which the world came to be divided after the conclusion of the Second World War. Pandit Nehru did not want to align his country with any of these blocs, though he endeavoured to be on good terms with both.

For more than a decade after independence, this policy of non-alignment and peacful co-existence appeared to be quite successful. India saved herself from getting involved in international disputes and her prestige rose higher in world bodies. India was also able to secure considerable economic and financial aid from both blocs without compromising her sovereign principles. The U. S. A. gave large assistance and the Soviet Union also helped us in setting up several industrial plants. India established friendly relations both with European and Asian nations, including China. With external and internal peace and harmony, India was able to make considerable progress in industrial and economic sectors.

India's foreign policy as evolved by Pandit Nehru was far from perfect. His advocacy of peace and neutrality of course generated a feeling of friendliness from our side but it created in us a false sense of security. Being peace-loving himself Pandit Nehru thought that all our neighbours were also lovers of peace. This attitude led him and our government to focus all attention on economic growth to the neglect of the defence of the country. This was brought home to us in the most shocking manner when China invaded our Himalayan borders and inflicted a crushing defeat on our defence forces in that region.

The Chinese aggression exposed the hypocrisy and lip-service of Mr. Chou-en-lie to the cause of peaceful co-existence. It also exposed the folly of trusting other nations blindly and neglecting our defences. Above all it lowered the prestige of India's military might, in the world. The Chinese debate opened our eyes to a large extent that a one-sided policy of peace and non-alignment does not pay any dividends.

With the coming of Shastri on the scene, our foreign policy underwent considerable change. Shastri, of course, was no war-monger but he did not believe in a policy of appeasement and compromise beyond a reasonable limit. This became clear over the Kutch dispute with Pakistan. It was only on account of Shastri's tough attitude that Pakistan agreed to a reasonable agreement. India's changed foreign policy was best demonstrated during the Indo-Pak Conflict. Pakistan threw a challenge to our freedom and territorial integrity and Shastri took up the challenge and provided the right. Now Pakistan and the world knows that there is a limit beyond which India's patience and love of peaceful co-existence cannot go.

The Indo-Pak war also exposed another aspect of the foreign policy as expounded and advocated by Pandit Nehru. Non-alignment and peaceful co-existence had failed to win any sincere and strong friends for us in the international world. We have no allies in the United Nations where in spite of our protests Pakistan has not been declared aggressor. Britain and U. S. A. have betrayed a partisan spirit, while Portugal, China, Iran, Jordan, Turkey and Indonesia openly ranged themselves on the side of Pakistan. It were only Russia and Malaysia who supported our cause, while the U. A. R., Egypt and even Ceylon showed a lukewarm attitude.

The big nations are angry and want to pressurise us into walking into one camp or another. Shastri was not prepared to submit to this pressure and throw non--alignment overboard and become a camp follower of one of the power bloc. He had taken a firm line—the line of intrinsic strength, self-sufficiency and self-reliance. Unless a nation is militarily strong, and self-sufficient it cannot preserve its prestige and independence. Our present foreign policy under Indira Gandhi is directed towards this end, and already a welcome change in the attitude of the big powers towards India is perceptible. We hope that if the present policy of firmness and self-reliance is followed we will not only settle our scores with Pakistan but also raise our stature in the world as a whole.

OUR DEFENCE PREPAREDNESS

The price of freedom is eternal vigilance and vigilance cannot be thorough and complete unless the free nation is strong and capable of defending itself against any aggressor. The world has not yet learnt the lesson of peace and disarmament. Military might is still the best shield for preserving freedom and sovereignty.

Ever since the dawn of independence India adopted a policy of peaceful co-existence and non.alignment. She tried to establish goodwill and friendliness with her neighbours and concentrated on economic and industrial growth. The defence forces of the country and military armament received little attention, for Pandit Nehru believed that with India's policy of friendliness and goodwill nobody will attack her and there was consequently no need to waste money on armaments.

The weakness of this short-sighted policy was exposed during the Chinese aggression when our forces suffered heavily on account of lack of ammunition and other military equipment. It was recalled with bitterness and anger that our ammunition factories were specializing in the manufacture of coffee percolators. The result was tragic beyond description. Not only did we lose thousands of miles of our Himalyan borders but we lost something most precious—face. The prestige of the Indian army sunk very low in the world.

The Chinese attack opend our eyes to the urgency of putting the defences of our country in proper form. Far reaching changes took place in the Defence Ministry. Chavan replaced Krishna Menon and a Deputy Minister was appointed for military production. Several new mountain divisions were raised to defend Himilayan borders. Heavy taxation was imposed by then Finance Minister, Morarji Desai to find additional money for defence needs. Gold bonds, compulsory deposit and several other measures besides voluntary contribution to the National Defence Fund provided the much needed finance for military equipment. Imports were cut down and exports encouraged and increased to earn valuable foreign exchange for buying arms and war material from abroad.

During the last three years a great deal of money has been spent on the defence of the country. Of course, neither Nehru nor Shastri agreed to take any substantial military aid from U. S. A. or Britain by compromising our sovereignty or our basic principles. Military equipment was obtained to a certain extent both from the Western democracies and Soviet Russia on a commercial basis. What was more important was emphasis on the indigenous production of arms and ammunition. India has begun to manufacture her own planes, guns and many other weapons and war material.

The attention which India paid to her defence forces during recent years has proved a great blessing. Pakistan has ever been unfriendly to us and has been provoking disputes over Kashmir and other border areas. In the summer of 1965 she attacked India in the Rann of Kutch. Though initially the Indian forces lost considerable ground the Pakistani atack was eventully halted. Besides; as our army was in good trim, Shastri took a firm line and declared that if Pakistan did not vacate aggressive area the Indian army will be free to follow a strategy of its choosing to bring Pakistan to her knees. This had the desired effect and the Kutch crisis was resolved.

The need of adequate military defence had once again been proved during the August-September Indo-Pak War. Pakistan first violated our territorial sovereignty by sending infiltrators into Kashmir and on September 1, 1965, she mounted a regular attack in the Chhamb sector. This led to a regular war with Pakistan all along the Punjab and Kashmir border- This war demonstrated beyond doubt our military might and superiority. The Pakistan army, despite the far superior armour and planes supplied by U. S. A. was badly defeated and humiliated.

In spite of the Tashkent agreement, Pakistan is re-arming herself. We are also speeding up the production of our gnats and other planes and military equipment. A great drive for National Defence Fund has been set afoot. Recruitment to the army is going on. The civic and homeguard corps is being raised.

Build-np of military armament is essential but even more essential is self-sufficiency in food and other necessaries of life. Equally important is unity and perfect communal harmony in the country. No less significant is peace between the workers and employers in the industrial sphere. Modern wars are not fought on the fields alone. They are fought and won in every town, factory and home. The civilian is as much exposed to enemy air activity as the soldier on the front. Hence the defence of the country is complete only when the soldier as well as the civilian keeps his moral high and is well-equipped to discharge his respective duties.

INDIA ENTERS THE SPACE AGE.

India will soon enter the Space-age in the field of communication. The International Telecommunication setellite Consortium (INTELSAT) will launch the Indian Ocean Satellite by the end of the year 1968. This satellite will establish commercial communication facilities between India and a number of other countries.

India is going to build a ground station estimated to cost about Rs. 4 crores, at ARVI, near Poona, for communicating via the satellite. An area of some 230 acres of land has already been acquired.

The satellite system will help improve India's communication facilities with the rest of the world. It may be mentioned here for the information of the reader that at present India has already got 32 direct radio telephone services, 29 radio telegraph services, seven direct international telex services, seven direct radio photo services and 27 leased telegraph channels. India has two submarine-cable telegraph links also.

When this is complete, Arvi will have the capability of handling television programmes far away from our country. It will then be possible for us to view on T. V. screens events like the Olympic Games taking place in Mexico or somewhere else.

Scheme has already been drawn by The Overseas Communications Service which is handling India's global traffic.

This scheme is to come under the Fourth Five Year Plan.

INDO-PAK RELATIONS

Pakistan's attitude towards India has never been friendly since its very birth in 1947. Instead of coming close to her neighbour (India), Pakistan has all along been vomiting hatred against this country. Ultimately it led to an open conflict in 1965. This opened the eyes of the rulers of Pakistan. They were made to realize that India was not a weak country but much stronger.

Through the good offices of the U.S.S.R. Prime Minister Alexie Kosygin, India and Pakistan signed the Taskant Declaration. It seemed that the two countries would now come closer to each other. But this was not to be. Pakistan is still harping on Kashmir and everyday, we hear Pakistan's army making mischief on some ground or the other. Recently the Pakistan troops fired on the Indian troops in Uri.

If Pakistan once realizes that Kashmir is now an integral part of India and the State's accession [to India] is complete, final and irrevocable, the relations between the two countries can be very beneficial to both economically as well as culturally. But are the rulers of Pakistan prepared to accept the matter of fact reality ?

INDO-CHINA RELATIONS. (Our China Policy)

Our relations with China have gone from bad to worse since 1957. In 1958 they occupied Longju post in Nefa and further laid claim to KHINLEMNE. They published a map indicating about 50 thousand square miles of our territory in Ladakh and Nefa as theirs. China had physically occupied twelve thousand square miles of Indian territory in

Ladakh region by the construction of Tibet-Sinkiang highway through Aksai Chin. India did nothing except to send a protest note which the Chinese Govt. might have thrown into the waste-paper basket.

Chou-en-lai visited India in 1960 and to settle the dispute but except making the fool of us did nothing.

In 1962 China invaded India, taking her unawares. India suffered heavily. What China wants is to show to its protectorates that India is not able to protect them in times of invasions. Their invasion had another sinister design also. China wants to force India to abandon her policy of non-alignment and to join the Western camp. China also is annoyed with India for giving asylum to Dalai Lama.

We quite realize that we can not appease China on any ground whatsoever. It is a matter beyond the thinking of any sober-thinking men why India does not change its China-policy. Even the full scale aggression of 1962 seems to have given no lesson worth the name to the leaders of our country.

China openly insulted our diplomats in Peking. They were publicly beaten and insulted. They even took courage to physically attack our officials in New Delhi. They are even inciting our people to rise in rebellion against their own country. 'Nexalbari' is a living example before us.

A time has now come when our leaders should pursue and think with a cool head. What we should do is to break off all our diplomatic relations with China. And to deal with a very firm hand wherever they try to create mischief fcr us. Nathu La-incident must have made the Peking regime realize that they cannot cow down India now. Force will be met by Force and there will be no compromise unless they (the Chinese) pledge that they will not misbehave in future.

INDIA AND NEPAL

Over recent years there seems to have occured a qualitative change in the relations between the two countries which traditionally have been and continue to be close in innumerable ways. Geographically and culturally the two countries form part of one vast continuum. Even during the British Period there was mutual give-and-take in economic, cultural and spritual fields.

Therefore, after the end of the British and Rana rules, the two Governments felt ideologically close to each other. India, being bigger in size and richer in resources and experience, was called upon to render whatever assistance it would in building a new Nepal. India happily undertook the task helping the economic development of Nepal and the establishment of a parliamentary democracy through general elections in accordance with a Constitution granted by the King.

In course of time China came in the way of evolution of Nepal and India along similar paths. Whatever may have been the common past of India and Nepal, the geographic reality of China's neighbourhood could not be ignored by any Government in Nepal. Besides, in China, Nepal found a large and resourceful country eager to cash in on any lapse of India in its dealings with Nepal. Therefore, India's slightest resentment against any act of the Nepalese Government could be balanced by overtures to China.

It was because of these two factors that India's criticism of the King's action of 15 December, 1960 was not taken lightly in Nepal. Consequently, Indo-Nepalese relations during 1961-62 were marked by unprecedented tension and bitterness. It seemed as if this was tho parting of the ways. Fortunately the Chinese invasion of India in October, 1962 brought home to India and Nepal the dire necessity of patching up their differences. The vulnerability of Nepal's northern border and its vital significance for India security compelled them to get together and restore normal relations. India realised that her national interest dictated a policy of friendship for Nepal, whatever be the latter's internal political orientation. As for Nepal, it also began to understand that after all it had much more in common with India than with China, though maintenance of normal relations with China was important. Mr. Shastri's visit to Nepal in 1963 represented the beginning of this realistic stance.

It is also to be remembered that during the 1965 Indo-Pakistan conflict the Nepalese Govt. adopted a very friendly attitude towards India.

India and Nepal are very much closer to each other to-day. India is helping Nepal in many ways to give strength to the mutual relations.

Under an agreement, the Gandak Project is being carried out by the Govt. of India. This project would be completed by 1970. It will mostly benefit Nepal. A power house of fifteen thousand Kilowatts capacity will be constructed by India as a gift to Nepal. Under the scheme, which is being participated in by Bihar and Uttar Pradesh, a barrage of nearly 2800 ft. in length will be constructed across the river with two canal systems. The cost of the project will Rs. 50 crores. The barrage which will provide a road-cum-railway bridge will improve communication and trade facilities with Nepal.

India and the Arab World

India has been following the policy of friendship not only with the countries far away from her continent but even with her neighbours specially Pakistan and China who are ever busy in maligning her and creating non-stop trouble and ever threatening her with armed conflicts on some pretext or the other.

India is a non-aligned country committed to no one particular block. She has always taken sides with the aggrieved nations.

In June 1967 Israel invaded the Arab countries with the sole sinister design of devouring them- It is quite evident that this was done with the full support of the United States and Britain.

India has supported the cause of the Arab countries and openely condemned the Israelis. This stand taken by India has raised much controversy and there are different views and comments from the people all over the world. Some hold that it was nothing but indicative of a lack of national policy on her part. The others hold that it was a wise step and that

India's own self interests required to support the Arab Cause.

Who is right or who is in the wrong, it is none of our business. We have to see whether India was right or wrong in supporting the Arabs in their war with the Israel in June, 1967.

It is a fact beyond doubt that under the present circumstances, India needs full support from the Muslim countries when Kashmir Problem is always hanging like Damocle's sword on her head. India, can, on no account, alienate the muslim block.

Secondly India has substantial trade with these Arab countries. And thirdly, all our air, sea and land routes to the West lie through Arab countries. In these circumstances how could we afford to do anything which should have cost us the Arab's goodwill ?

According to more sober thinkers, it would have been wiser for India to keep quite instead of talking so loud in support of the Arab countries, U.S.A. is supporting the Israilis and we can, on no account, anger USA on economic grounds. But India's stand has angered USA to a great degree. It was feared that USA might discontinue her food-aid to India. Had they taken this attitude our country would have met with hunger and starvation.

To conclude, we must say, that the best course for India was to keep silent, as silence, is sometimes golden, as goes the adage.

Latest Announcements.

All the new ten Ministers of BIHAR State sworn in on September 7, 1967 have been allotted portfolios as under :

1. Mr. Promod Kumar Mishra : Primary and Basic Education and teaching, Welfare.
2. Mr. Shyam Sunder Prasad : General Administration.
3. Mr. Mohan Lal Gupta : Food and Supply.
4. Dr. B. P. Jawahar : Community Development.
5. Mr. Azimuddin : Panchayat.
6. Mr. Shatrughana Besra : Revenue.
7. Mr. Rupnarain : Cooperation.
8. Mr. Simon Tigga : Sugarcane.
9. Mr. Bishundari Lal : Transport.
10. Mr. Philemon Toppo : Welfare.

Latest Changes in the Central Ministry

1. Mr. Bali Ram Bhagat : Minister of State for Defence Production has been appointed Minister of State in the Ministry of External Affairs.
2. Mr. Lalit Narayan Mishra : Minister of State for Labour Employment and Rehabitation has been shifted to the Ministry of Defence taking the place of Mr. Bhagat.
3. Mr. M. R. Krishna (Harijan) : M. P. from Andhra has been appointed as a Deputy Minister in the Ministry of Defence.

MAIN EVENTS DURING THE YEAR

1967

INDIA

JAN. 19.	Goa opinion poll results favours Goa, Daman and Diu to remain a Union Territory.
FEB. 14.	4th GENERAL ELECTION BEGINS, CONGRESS loses control over eight States (See 4th GENERAL ELECTION for details); But succeeds in forming Government at the Centre.
MARCH 13.	New Union Cabinet headed by Mrs Indira Gandhi takes office; Morarji Desai becomes Deputy Prime MINISTER cum Finance Minister. PRESIDENT'S RULE Proclairmed in Rajasthan.
APRIL 7.	Sindhi is declared one of the national languages (21st Amendment Act.)
APRIL 26.	President's rule in Rajasthan ends.
MAY 9.	Dr. Zakir Husain elected the third President of India. V. V· GIRI elected the Vice-President.
MAY 13.	Dr. Zakir Husain and V. V. GIRI Take oath of office.
MAY 15.	Senior Congress disidents form a new Party called Bhartiya Kranti DAL.
JULY 1.	Ayyanger Commission submits its reports and indicts Bakshi Ghulam Mohd. for misuse of power.
JULY 6.	Mirza Afzal Beg, who had been detained by the Central Government under the D. I. R. is released.
JULY 7.	Police take action in Naxalbari (W. B.)
JULY 11.	Prohibition scrapped in Madhya Pradesh.
JULY 16.	Naxalbari agitation comes to an end with the arrest of a large number of ring leaders.
JULY 19.	The West Bengal Govt. took over the management of the 87 year old British owned Calcutta Tramway Co.
JULY 20.	D. P. Mishra, Chief Minister of Madhya Pradesh submits resignation. His ministry loses on 'Education Grants Motion' by 153 votes to 137.

SEP. 12. Shoshit Dal leader, Mr. B. P. Mandal told by the Bihar Governor Mr. M. A. Ayyangar that since he was not constitutionally qualified to be a Minister, he had no option but to reject his request to form a new Government in Bihar.

SEP. 13. Chinese troops clash with the Indian patrol at Nathu La.

SEP. 19. Eight Congress members of the Manipur Territorial Assembly defected to the United opposition Front reducing the ruling party to a ministry in the 32-members House.

SEP. 20. Heavy rains in Patna; completely paralysed life in the city.

SEP. 24. G. L. Nanda, Congress High Command's emissary to West Bengal, announces the dissolution of Pradesh Congress Committee and said an adhoc committee would be set up to re-organize thoroughly the Congress in the State.

OCT. 1. Chinese Troops open Fire on Indian Troops at CHO-LA. Quit India stamp released;

4. Ten Years Congress rule ends in Manipur.

8. Prime Minister Indira Gandhi arrives in Warsaw (Poland) on her first step in a tour of East European Countries.

9. The Pakistan forces resort to unprovoked firing on an Indian patrol in the Uri sector in Jammu and Kashmir.

10. A severe Cyclone over Erosoma and Tirtol near the Paradeep Coastal areas in Cuttak rendering thousands homeless.

12. Death of Dr. Ram Manohar Lohia, the Socialist Leader. W. B. Congress Committee replaced by 7-member Ad Hoc Committee. Dr. Zakir Husain lays the foundation stone of the Indian Air Force Academy at Begumpet (Hyderabad).

23. Ceylon's Governor General Mr. W. Gopallawa arrives in New Delhi: Morarji Desai leaves for Nepal to have high level talks with the Nepalise Govt.

(For Events in November refer page 48)

CURRENT AFFAIRS

1968

WORLD

Arab-Israel War 1967.

Causes:—

(1) Ever Since the State of Israel came into existence, it has been an eye-sore for the Arabs. They (Arabs) have never tried to be friend the Israelis, but instead they have been declaring their resolve to see Israel destroyed.

(2) The two countries have been persistently trying to incroach on each other's territory.

(3) With the establishment of the state of Israel about 6 lakh Arabs were rooted from their homes in Palestine. They have been living in Jordon since then in refugee camps with the hope that a day will come when they will go back to their places. Now their number has increased to nearly one million and there is absolutely no hope of their returnining to their homes.

(4) The Arabs have never allowed the Israeli ships to pass through the Suez Canal.

(5) **Jordan Water Dispute:—**

The 156 mile long river Jordan has its origin in the foot hills of the Hermon mountains. It is joined by the river Hasbani in Labanon, Banios in Syria and Dani in Israel. It is in Jordon that the river receives its largest tributary, the Yarmik. Thus it is quite evident that the river Jordon receives about 75% of water from the Arab countries and only 25% from Israel.

The Israelis, since the day of their existence, have been trying to divert the lower waters of the river from Lake Tiberias to the Negev desert thus depriving Jordon and Syria their legitimate water supply. If the Israels implement their proposal it would turn a large portion of the Arab countries into a desert. Israel has threatened a number of times to go ahead with its scheme. That is why the Arab countries want to distroy the state of Israel and end this eye-sore for ever.

Arab-Israel War (June 5, 1967 to June 11, 1967):—

Thus the long-standing tension and heart burning between the two led to an abrupt out break of full scale war on June 5. From the very beginning the Israelis gained the upper hand. They surprised the whole world including U.S.S.R. by completely destroying the Arab airfields and other places of strategic importance. They captured the Sinai Desert, Jeruslem, gained control of the Gulf of Aqaba and reached the Western bank of the Suez Canal.

On June 9, the U. N. intervened and appealed for an unconditional cease fire. Jordon immediately accepted it on the 9th but UAR and Syria took two days more. The Arab Armies were completely battered by the Israelis and it was out of frustration that the UAR accepted defeat.

Post- War Developments

The Israelis captured, as mentioned above, the Sinai Desert, jerusalam, & gained control over Gulf of Aqaba. The Arab countries have since been demanding the Israelies to vacate the aggression but the Israelis have been declining to give back even an inch of the occupied area. No doubt, there has been a cease-fire but the conflict goes on.

The U. S. S. R. took the side of the U. A. R. and broke off her dip lamatic relation with the State of Isreal.

The defeat of the Arab-countries completely damaged President Nasser's image as the strong man of the Nile. He announced his resignation but next day withdrew it in response to pressure of public opinion.

The Israel state because of her upper hand in the war is not prepared to yield or surrender on any one issue. It has declared that the armistice can be arrived at only if the

Arabs guarantee that Syria would not again indulge in terorist activities and that the Gulf of Aqaba and the Suez Canal would be opened to them (the Israelies). And that Israel will not enter into any treaty collectively but separately with Egypt, Jordan and Syria.

It is now feared that a full scale war may again break out between the two parties and it may drag the world also into a third war.

2 U. K. Historians Predict Fourth Arab-Israeli War

Two British historians have recently forecast a fourth Arab-Israeli war which, they said Israel may not win—unless the Palestine refugee question is settled.

The fate of one million Arabs, displaced when Israel was formed 19 years ago, was identified as the focus of the grim new tussle within the Muslim world by eminent historians, Mr. Michael Howard and Mr. Robert Hunter.

They also suggested Israel's victories may have created as many new problems as they solved, 2 1/2 millon Jews", they said, "now control territory containing nearly 1,500,000 Arabs...who are likely, in future, to make up nearly a quarter of Israel's population, Israel will be confronted with all the problems of a multi-racial society in which the minority group is potentially hostile and sustained by powerful supporter beyond the frontier.

Among these supporters are Jordan's King Hussain and Algerian President Boumedienne, representing the moderate and revolutionary wings of the Arab world, and the two are struggling for the ascendency of their approaches. So long as the fundamental Arab grievance over the refugees remains unsettled, the report said Israel will be fighting a losing battle. "And if Col. Boumedienne wins there will be a fourth Arab-Israel war," Mr. Howard and Mr. Hunter wrote. "It will not be so short as the third and there can be no assurance that this time Israels will win."

The war, they envisaged, would be neither the classical conflict of the past nor a Vietnam-type guerrilla struggle but:

"Intercommunal friction—the sniper at the upper window, the grenade lofted into the coffee house."

Mr. Howard and Mr. Hunter warned that Israel's victories may yet yield bitter fruit unless her military talents are matched by statesmanship calling for abandonment of "many Zionist ideals" and a reversion to the concept of " Palestine shared peacefully between Arab and Jew.

New Move At U. N. To Solve W. Asia Crisis

The 10 non-permanent members of the U. N. Security Council formed a Committee on Nov 1, 1967 to draft a resolution promoting a settlement of the Arab-Israeli dispute.

Composed of India's permanent representative, Mr. G. Parthasarathi, Mr. Jose Maria Ruda of Argentina and Mr. Otto Rose Borch of Denmark the committee would try to work out a document. The Council would consider it at its next meeting.

The U. N. Secretary-General, U. Thant, proposed to the Security Council a greatly expanded U. N. truce supervision operation in the Suez Canal area to include naval and air observation as well as existing ground posts.

He also appealed to Egypt and Israel to "exercise the utmost restraint" in the sensitive canal sector and to use the U. N. peace making machinery there instead of "resorting directly to violent measures.

U Thant said that measures to strengthen the observer operation would not suffice to maintain the cease-fire, unless the parties themselves were willing to exercise the utmost restrain in the Suez Canal sector and, in particular "to respect scrupulously the arrangements which they have, in fact, agreed upon."

He went on: "I renew this appeal to both parties and urge them to give assurances to the Chief of Staff of the U.N. Truce supervision operation that in cases of alleged violation of the cease-fire each side will make use of the U.N. cease-fire observation system instead of continuing to follow the practice of resorting directly to violent measures."

War in Vietnam is causing great concern the world over. Not caring for the world opinion the U. S. A. is not prepared to stop bombing the North Vietnam. The war escalated still further with the U. S. bombing of Hanoi and the port of Haiphong.

In May, 1967 the U. N. Secretary General offered a new peace plan but it was turned down by the U.S.A. President.

In spite of the wide spread international concern over the conflict in Vietnam, the fighting goes on with no sign of an early end. China has recently (Nov. 1967) announced that if U. S. A. does not stop bombing, it would openly join the North Vietnamese against the U. S. A. with arms, & ammunitions. We give below the statistics that will interest the reader:—

Pentagon figures show that at least 473,000 Americans are serving in South Vietnam.

The statistics indicate that the U. S. now is fighting its biggest since World war II.

Latest U. S. reports place about 390,000 fighting men inside Vietnam—245,000 army, 23,000 navy, 68,000 marine corps and 54,000 air force.

About 50,000 more men are assignad to the 7th U. S. fleet off South Vietnam and there are at least 25,000 soldiers in Thailand and 8,000 in Guam aiding the Vietnam effort.

These figures do not include more than 50,000 military men stationed in Okinawa and the Philippines.

The war in Vietnam has so far cost the U. S. A. more than 15,000 killed or missing according to official figures.

A U. S. communique said that by October 28, 1967, 14,266 troops had been killed since the beginning of the war. Another 805 had disappeared or been captured. The number of the wounded totalled nearly 100,000. The Vietcong were believed to have not more than about 10 prisoners.

U. S. losses in South Vietnam in the week ended October 28 were 166 killed and 966 wounded. South Vietnamese casualties were 210 killed and 693 wounded. Casualties among America's allies were 60 killed and 120 wounded.

At present the U. S. A. has 473,000 troops in Vietnam. Other allied forces (Koreans. Australians. New Zealanders. Thais and Filipines) totalled 59,000 men.

1,742 U. S. Plans Lost In Vietnam War

The Americans have lost 1,742 aircraft over North and South Vietnams since the start of hostilities upto October 31, 1967.

During the same period 1,097 helicopters were lost; eight of them over North Vietnam.

Every day we come across demonstrations against the U.S. bombing in Vietnam even within the U.S.A. but the Johansonian regime is adament over the stand it has taken over the issue.

Even the Soviet Defence Minister, Mr. Andrie A. Grechko, while speaking, on the 50 th anniversary of the Bolshevike resolution (7-11-67) said the war in Vietnam was causing a deep alarm and the Soviet Union was doing everything to strengthen its defence capicities.

In case the U. S. does not stop bombing of the North Vietnam, It may lead to a world war with dangerous consequences.

INDONESIA

The era of Dr. Sukarno came to an end on June 21, 1966 when he was first stripped of his title of life Presidentship and Gen. Suharto assumed full powers. Dr. Sukarno continued to be the President in name only.

But on March 11, 1967 by a resolution, the Indonesian Congress withdrew all powers given by it to Dr. Sukarno and General Suharto was appointed the Acting President.

There is great stir and internal instability in the country. Th Students Action Committees (Kami & Kapi) forced the ruling leaders to break off diplomatic relations with People's Republic of China which they did on October 8,1967.

CHINA

China's Red Guards and 'Cultural Revolutions' have created difficult situation not only within their own country but have created grave problems for the whole world.

President Liu Shao Chi has been stripped off all powers. His whereabouts are not known. Mr. Chou-en-lai has taken over his role and functions.

The Red Guards have created terror throughout the country. Persons who do not see eye to eye with Mao's teachings are subjected to very cruel treatment.

In Hongkong the so called followers of 'The Cultural Revolutions' clashed with the workers of local factories.

On the Indian front also the Chinese are making mischief. In September, 1967 they fired on the Indian Troops at Nathu-La and on October 1, at Cho La.

According to Mao-Tse-Tung, the only way to live in peace is to wage war against other countries.

They have now started interfering in North Vietnam also. They have openly declared that in case U.S.A. does not vacate aggression Chinese Government will be forced to send men, arms and ammunitions to save the North Vietnamese from the American brutalities.

Sino-Soviet Rift

The new Chinese Cultural Revolutionaries are brandishing the Russians with following a policy of 'revisionism'.

The relations between the two countries have strained to such an extent that the war of words may one day take the form of 'war of bombs, rockets and missiles'.

Recently the Russian diplomats were subjected to very inhuman indignities. The visa agreement between the two countries has been suspended. The Soviet Union apprehending trouble are diverting a large part of their forces in Europe to Sikkiang Border. The Chinese on their part are doing their best to malign the Soviet Union in all possible manner and accussing it going the imperative way.

YEMEN

There was a bloodless coup (5.11.1967) in Yemen. The rebel army over-threw President Abdullah Sallal, who flew to some unknown place.

The heads of the coup were several former exiles who returned to the Yemen a day earlier to patch up their differences with Mr. Sallal and initiate a national reconciliation. One of the former exiles, Abdul Rahman Al Ireani has been named provisional figurehead. A temporary military council is entrusted to manage the State until a new cabinet is formed.

The new President pledged the new regim's respect of the Arab League Charter and all other accords binding the Yemen." "The main objective of the new regime is to 'correct the situation' in the country. The army take-over aims at establishing sounder bonds with other Arab states, with U. A. R. at their head. The Yemini Army and people can never deny or forget the invaluable sacrifices the UAR has rendered to the Yemini Republic and its revolution.

EXPEDITIONS

(During the Year 1966-1967)

Hanuman Peak : 19,930 feet high Hanuman peak in the Himalayas. Successfully climbed by the Giri Vihar Expedition of Maharashtra.

Gangotri : The 21650 ft. Gangotari Peak succesfully climbed by the Gujarat University Expedition on June 20, 1966. Dr. Bharat Shukla was the leader of the party.

Gangotri-2 : The 21890 ft. high Gangotri Peak was successfully climbed up by the Gujarat University Girl's Expedition on June 25, 1966.

Mount Mc-Kinlay : This 20,320 ft. high peak in America was successfully scaled by the Anchorage climbers in March, 1967.

Ronti Peak : An all women expedition climbed the 19893 ft. high RONTI Peak in Oct, 1967 in the Garhwal region of the Himalayas. Miss Deepavali Sinha was the leader of the party.

Kedarnath Peak : The 22,419 ft. Kedarnath Peak was climbed by a party of the Kedarnath expedition on September 30, 1967.

SPACE-ACHIEVEMENTS

(During the Year 1967)

U. S. A.

Surveyor-3 : The unmanned U.S. space craft launched on April 17, 1967. It successfully soft-landed on the Moon. Apart from sending samples of Moon dust, it also transmitted pictures.

Orbitor-3 : The unmanned American spacecraft shot towards the moon to photograph likely landing sites on the lunar surface. (on 4.2.1967)

Titan-3 : (five-in-one U. S. space shot) The U. S. A. shot into space TITAN-3, a powerful rocket carrying three scientific satellites and two robot sentries 28.4.67).

O. G. O.–3 : Or Orbiting Geophysical laboratory : This earth satellite was shot into space from Cape Kennedy onJune 6, 1967. It was sent to probe solar winds, solar flares, magnetic density.

Surveyor–VI : Camera carrying Surveyor VI soft landed on the rugged Sinus Medii in the centre of the moon's sunlit side on Nov. 9, 1967.

The three legged spacecraft breaked itself to a touch-down in a rugged area near the centre of the lunar disk. Its mission is to photograph potential astronaut landing sites.

SATURN–V super rocket huried an unmanned APOLO moonship 11,234 miles into space on 9.11.1967. It was 363 ft. 3000 ton monester spaceship. It will prove forerunner of one that will eventually take Astronauts to the moon.

Mariner–5 : The U. S. A. launched spaceship MARINER-5 to probe into the Venus. Mariner-5 began sending back information registered during its swing round the hidden side of Venus. (Oct. 21, 1967)

U. S. S. R.

Soyuz–1 or Union–1 : The Russian manned spaceship launched into space on April 24, 1967 piloted by Col. KOMAROV. The spaceship unfortunately crashed down to earth causing instantaneous death of Col. Komarov.

Cosmos–181 : An earth satellite, Launched on 12-10-67.

Cosmos–182 : Launched on Oct. 16 Cosmos–182, latest in its series of research satellites-

Cosmos–184 and Cosmos–185 : The U.S.S.R. launched two unmanned earth satellites in its Cosmos series on Oct. 28, 1967. Cosmos–184 was described as having a circular orbit similar to the two previously announced wheather satellites. Cosmos–185 went into a higher orbit than usual.

Cosmos–186 : Launched on October 27, 1967.

Cosmos–188 : Launched on October 30, 1967.

Cosmos–189 : Launched into a near circular orbit at a distance of between 370 and 333 miles (600 & 535 km. From the earth) (30.10.1967).

Venus–4 : The latest automatic station Venus–4 covering a distance of some 350 million kilometres reached the planet Venus on October 18, 1967.

The apparatus landed on the planet's surface and delivered the second pennant with the national emblem of the Soviet Union.

The Dramatic Story of Venus-4

The Soviet Union on Oct. 18, 1967 scored a historic first in the exploration of space by "soft landing" a space-craft on the surface of Venus.

It was the first time that a spacecraft has ever been 'soft-landed' on the planet, although another Russian space-craft slammed into venus and was, presumably, destroyed in March 1966.

It was also the first time scientists have ever received information from the surface of the cloud-shrouded mystery planet, earth's closest neigbour except for the moon.

Uptill now it was presumed the Venusian atmosphere was composed almost exclusively of carbon dioxide.

The oxygen and water-vapour content was only about 1.5 per cent. Earth's atmosphere contains about 21 per cent oxygen and its water-vapour content varies from zero to 4 per cent by volume.

Temperature

The temperature of the Venusian atmosphere—over the course followed by Venus-4 in reaching the planet's surface—ranged from 40 to 280 degrees centigrade.

Barometric pressure varied between one and 15 atmospheres.

The equipment-package destined to sample and report on conditions on the planet was ejected from the spacecraft and placed on the surface by a parachute which opened automatically.

The instruments "conducted continuous stable measurement and transmission to the earth of the parameters of the atmosphere for an hour and a half." It did not make clear what happened then or why the transmissions ended.

Venus 4 entered the atmosphere of the planet at 10.04 a.m. IST 'The scientific laboratory detached itself from the station'—meaning the 1,1057 kilogram spacecraft—and started its descent.

'After aerodynamic descent of the apparatus in the atmosphere the automatic parachute system took over and it continued gradual descent in the atmosphere of Venus.'

Venus-4 found 'the absence of any noticeable magnetic field or radiation belts' around Venus as it approached the planet. 'A weak hydrogen corona was detected.'

Fascinating

According to signals picked up at the Jodrell Bank space station signals from the space craft ceased abruptly at 5.38 a.m. (1008 IST) about eight minutes after the Russians forecast it would land on the mystery planet.

Only 15 seconds later an entirely new set of signals was received from something on the planet's surface.

Sir Bernard Lovell, Director of the space tracking centre said:

'This is a most tremendous moment. It now seems that the Russians know for the first time what the surface of Venus is like.'

He said the prospect was 'absolutely fascinating.'

Sir Bernard came down from the satellite tracking room to tell reporters: 'I have a surprise announcement to make. We are now receiving signals from a package which appears to be on the surface of the planet.'

He added 'we think that possibly about 5.30 BST (1000 hours IST) the Venus IV spacecraft ejected an instrumented canister and descended independently probably by parachute on the surface of the planet.

4-Month Journey

Radio signals apparently transmitted from the surface of Venus were picked up at Jodrell Bank (England) after Venus 4 completed its four-month journey to earth's sister planet.

The signals believed to be coming from the surface of the planet ceased at 11.44 hrs. IST.

Jodrell Bank had been picking them up for more than 1.1/2 hours.

'They may now have been switched off' Prof. Lovell said.

Jodrell Bank had been asked by the Russians to track the probe as it neared the end of its 4-million mile flight.

Clear signals were picked up by the observatory at 0847 hrs. IST on October, 18, 1967. At 10.08 hrs. IST they ceased—indicating that any attempt to land the probe on the surface of the cloud-wrapped planet had failed.

Ten Years Of Space Age

The first man-made satellite sputnik -1 was launched by Russia on October 4, 1957. It circled the earth about every 90 minutes at 140 to 560 miles (225 to 900 kms) altitude.

America's first satellite explorer was launched in January 1958.

The world's first space passenger was the Russian dog Laika, put into orbit in Sputnik —II in November 1960.

Yuri Gagarin became the first human space traveller when he was launched into orbit in the spaceship Vostok -1 in April 1961.

Lieutenant Colonel John Glenn became the first American in orbit when he circled the Earth three times in February 1962.

Man's first ventures into the solar system, beyond the reach of earth gravity began with Russia's Lunik -1, launched in January 1958. It went into orbit around the Sun to become the first artificial planet.

Eight months later. Lunik -II hit the Moon's surface carrying a Soviet pennant.

Lunik III-October 1959, flew round the Moon and photographed its unseen side-

So far the only woman space traveller has been Valentina Tereshkova who orbited the earth 48 times in Vostok VI in June 1963.

March 1965—Alexei Leonov took the first walk in space.

October 12, 1964—The first multi seater spaceship with three men aboard.

Luna 9—Russia achieved the first soft landing on the moon on February 3, 1966.

The first U. S. Lunar soft—lander Surveyor 1—in June '66 took 11,500 pictures.

April 24, 1967 Soyuz -1 crash landed killing Soviet astronaut Vladimir Komarov first man to die on a space flight—For Rest See 'SPACE ACHIEVEMENTS DIARY'

Little Olympics

Mexico's final shakedown for the 1968 Olympic Games opened on Nov. 11, 1967 with the largest international athletic gathering of the year.

More than 2,500 athletes from 57 countries, including 70 to 80 from the USA, will compete in the 18 events of the third international sport competition. The nickname has been changed from Little Olympics to Pre-Olympics but the intent is the same.

The Competition is designed to give athletes a chance to test themselves against high calibre rivals in Mexico City's 7,347-ft altitude and also to show up any loose organizational problems so that the Mexican Olympic Organising Committee can run things smoothly next year.

Meanwhile,several countries, including North Korea,Syria, Iraq and Ceylon, face the possibility of not being allowed to compete in the Olympic Games weightlifting tournament.

These countries competed last year in the GANEFO Games which were not recognised by the International Federation. Some of them, including North Korea, were suspended for one year.

This suspension period has just ended and the Federation's Bureau will have to decide on Thursday what further action is to be taken.

It is just possible that a further year's suspension may be imposed. This would mean ,no Olympic Games for the suspended countries.

MAIN EVENTS DURING THE YEAR 1967

WORLD

Jan. 27. U.S.A. U.S.S.R. and U.K. sign draft Outer Space Treaty.

" 30. SATO's party wins elections to Japanese DIET.

Feb. 5. U.S.A. launches lunar space craft Orbiter–3.

March 12. Gen. Suharto sworn in as Acting-President of Indonesia. (Dr. Sukarno is stripped of all powers).

April 12. U.S.A. decides to resume supply of Arms to Pakistan.

" 19. Death of Dr. Adenaur.

" 19. U.S.A's Surveyor–3 softlands on moon.

" 21. Army seizes power in Greece.

" 23. Death of Russian cosmonaut Vladimir Komarov as his space craft Soyuz–1 crashes down to earth.

May 8. U.S.A. launches Orbiter–4.

" 18. President Nasser of U.A.R. asks U.N. Secretary General to withdraw the entire U. N. Personnel from Egyptian territory and Gaza.

" 19. UNEF Forces withdrawn.

" 23. U.A.R. closes Gulf of Aqaba to Israel.

June 4. Iraq joins UAR and Jordan in Defence Pact against Israel.

" 5. Arab-Israel War breaks out. Israel gives a crushing defeat to the UAR countries.

" 10. U.N. call for Cease-fire accepted by both—the Arabs and the Israelies.

" 17. China explodes her first Hydrogen Bomb.

,, 23-26. President Johnson and U.S.S.R P.M. Alexie Kosygin discuss world problems at Glassboro (New Jersey, U.S.A.).

,, 28. Dr. Zakir Hussain of India inaugurated 'India Week' at ExPo' 67 at Montreal (Canada).

July 14. Suez Canal zone attacked by Israeli forces.

,, 16. U.N. observers appointed to supervise Suez Canal area.

,, 17. Arab Summit Conference in Cairo.

,, 21. The U.K. extends another loan of Rs. 25.2 crores to India.

,, 25. Racial Riots in USA.

,, 29. The leaders of Iran, Pakistan and Turkey meet at Raman, a Caspian Sea resort to exchange views on matters of mutual interest.

August 8. Malaysia, Thailand, Indonesia, Singapore and the Phillipines form a new regional group ASEAN—after a 4 day discussion at the ministerial level in Bangkok.

Sep. 23. The Soviet Union announced it was sending war planes, missiles, artillery and a wide range of other military equipment free of charge to North Vietnam.

Oct. 5. Nigerian Federal troops capture Enugu, the capital of the breakaway Eastern Nigeria.

,, 7. Chinese Chief of State. Liu-Shao-Chi arrested.

,, 8. Death of Lord Attlee, former Prime Minister of Britain (1945-51); worst ever riots in Tokyo (Japan) against Prime Minister Sato's visit to South Vietnam, Jakarta breaks diplomatic ties with Peking.

,, 9. Death of French academician and author Andre Maurois.

,, 11. Indonesia's Cabinet reshuffled.

,, 16. Russia launches Cosmos-182 latest in its series of research satellites.

" 19. U.S.A. launches Mariner-5 space craft.

" 23. The Egyptian Navy sank an Israeli ship north-east of Port Said.

" 24. Russia launches another space-craft Cosmos-186.

" 31. Lt. Gen. Nguyen Van Thieu sworn in as President of South Vietnam.

Nov. 3. The Soviet Union launch another unmanned (seventh) satellite-Cosmos 190.

" 4. Dr. Ho Chi Minh of North Vietnam awarded the Order of Lenin, the highest Soviet Decoration. Dr. Ho requests the Soviet Union to postpone it till the U.S.A. vacates aggression in his Fatherland.

" 5. Army seizes power in Yemen ousting President Abdullah Al Sallal.

Nov. 19. Britain devalues the pound sterling by 14.3 per cent. The Government fixed the world trading currency at a parity of 2.40 against the U. S. dollar. (One pound sterling will now be equal to Rs. 18 instead of Rs. 21).

" 19. UK-UAR restore diplomatic ties after a 23 month break.

" 22. The Soviet Union tables a resolution in the Security Council calling for immediate withdrawal of Israeli troops from occupied Arab territory.

INDIA

NOVEMBER 1967.

Nov. 20. Rohini, an all-India rocket launched from the Thumba rocket centre. West German Chancellor, Dr. Kurt Georg Kiesinger arrives in New Delhi.

The Government of India announces that the par value of the Indian rupee will remain unchanged despite the devaluation of the British pound.

" 21. W. Bengal and Haryana Ministries dismissed by their respective Governors.

In West Bengal, Dr. P.C. Ghosh formed the new Ministry while in Haryana the administration of the State was taken over by the President.

" 22. Punjab Ministry Resigns.

MAIN EVENTS DURING JANUARY 1968

(INDIA AND THE WORLD)

INDIA

Jan. 4. In his first Press Conference after his release on Jan. 2, Sheikh Abdullah assures to try for bringing India and Pakistan closer. But himself refuses to say he is an Indian. He said the question was 'irrelevant' in the context of the great objectives he had set for himself.

„ 5. Prime Minister Indira Gandhi describes the release of Sheikh Abdullah as an 'Experiment' and said that 'One could not say' if any useful purpose would be served by allowing him to go to Pakistan.

First Asian women's Hockey Championship begins at New Delhi (Lady Hardinge Grounds) India, Ceylone, Japan, Uganda and Kenya participated.

„ 6. Harbans Singh, 29 years old clerk in Tata Iron and Steel Works, Jamshedpur sets a world record by walking non-stop for 152 hours. The previous non-stop walking record of 154 hours was set by France's Parry Gilbert at Nairobi (Kenya) in 1961.

The Government of India expelled the Counsellor in the Pakistan High Commission in New Delhi, Mr. M. M. Ahmad, for distributing money and arms to subversive elements in India.

,, 7 All India Congress Session starts at Hyderabad with Mr. S. Nijalingappa as the new Congress President.

,, 10 State of 'Emergency' ends in India.

,, 17. Mr. Justice Mohammad Hidayatullah of the Supreme Court appointed as Chief Justice of India in succession to Shri K. N. Wanchoo.

Jan. 17. The Bihar Government announces specific charges against six former Congress Ministers, including former Chief Minister, K. B. Sahai.

,, 22 . President Tito of Yugoslavia arrives in New Delhi to discuss matters of mutual political interest with the Prime Minister of India. This is his fourth visit to India. His earlier visits were undertaken in 1954, 1959 and 1966, the last in connection with the tripartite meeting between President Nasser, President Tito and Prime Minister Indira Gandhi.

Sheikh Abdullah declared that his plan to visit Pakistan on an amity mission remained unchanged.

The Indian International Trade and Industries Fair Opens at Madras : 17 countries, mostly socialist countries participated.

,, 26 India celebrates Indian Republic Day. Mr. Alexie Kosygin of Soviet Russia and Marshal TITO President of Yugoslavia are also present.

WORLD

Jan. 4. President Johnson announces he was sending Mr. Chester Bowles, the U. S. Ambassador to India for talks in Phonom Penh with Combodian Prince Sihanouk.

Prince Sihanouk's objective is to keep the Vietnam war from spreading into Combodia, though he had said he would not intervene militarily if Communist Vietnamese and U. S. troops entered his territory illegally and engaged in limited combat.

" 5. The United States turns down the offer of the Government of the Democratic Republic of Vietnam for the opening of talks with the qualification of unconditional cessation of bombing of the North Vietnam.

" 6. Twenty eight persons, including some junior army officers arrested for allegedly trying to bring about the secession of East Pakistan.

Pakistan expells Mr. P. N. Ojha the First Secretary in Indian Deputy High Commission Decca (Pakistan).

" 7. The University of Ceylon at Peradeniya decides to create a department of Hindi studies. The U. S. A. launches Surveyor-7.

" 15. Earth-quake at Sicily causes 600 deaths.

" 16. The United States decides to aim its newest nuclear missiles at Soviet cities rather than military bases in the event of war.

The British Government announces its troops pull out from east of Suez by 1971.

The first Congress woman of U.S. leads 5000 women to the capital (Washington) demanding cessation of the war in Vietnam.

Jan. 19. The U.S S.R. and U.S.A. submit a joint draft on nuclear disarmament. The Soviet Union warns the U.S. to keep its hands off Combodia.

„ 22. The Costa Rican Government rejects a request for asylum for Dr. and Mrs. Dharam Teja of India Teja is wanted for questioning in his home land in connection with a fraud case.

„ 23 The United States resume normal diplomatic contacts with Greece, formally recognizing the ruling junta.

Airlift of U.K. troops begins at Singapore.

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